

TOSHIBA

FILE NO. 020-200516

CIRCUIT DIAGRAMS

LCD Color Television

32HLX95

SCHEMATIC DIAGRAM

MODEL : 32HLX95

WARNING : BEFORE SERVICING THIS CHASSIS, READ THE "SERVICE SAFETY PRECAUTIONS" ON THE MANUAL FOR THIS MODEL.

CAUTION : The international hazard symbols " $\triangle$ " in the schematic diagram and the parts list designate components which have special characteristics important for safety and should be replaced only with types identical to those in the original circuit or specified in the parts list. The mounting position of replacements is to be identical with originals. Before replacing any of these components, read carefully the SERVICE SAFETY PRECAUTIONS on the MANUAL for this model. Do not degrade the safety of the receiver through improper servicing.

NOTE:

1. RESISTOR Resistance is shown in ohm [K = 1.000, M = 1.000.000]. All resistors are 1/6W and 5% tolerance carbon resistor, unless otherwise noted as the following marks.
1/2R = Metal or Metal oxide of 1/2 watt 1/2S = Carbon composition of 1/2 watt
1RF = Fuse resistor of 1 watt 10W = Cement of 10 watt
K = $\pm 10\%$ G = $\pm 2\%$ F = $\pm 1\%$
2. CAPACITOR Unless otherwise noted in schematic, all capacitor values less than 1 are expressed in μF , and the values more than 1 in pF.
All capacitors are ceramic 50V, unless otherwise noted as the following marks.
— $\overset{+}{|}$ — Electrolytic capacitor — $\textcircled{+}$ — Mylar capacitor
3. The parts indicated with " $\triangle$ " have special characteristics, and should be replaced with identical parts only.
4. Voltages read with DIGITAL MULTI-METER from point indicated to chassing ground, using a color bar signal with all controls at normal, line voltage 220 volts.
5. Waveforms are taken receiving color bar signal with enough sensitivity.
6. Voltage reading shown are nominal values and may vary $\pm 20\%$ except H.V.

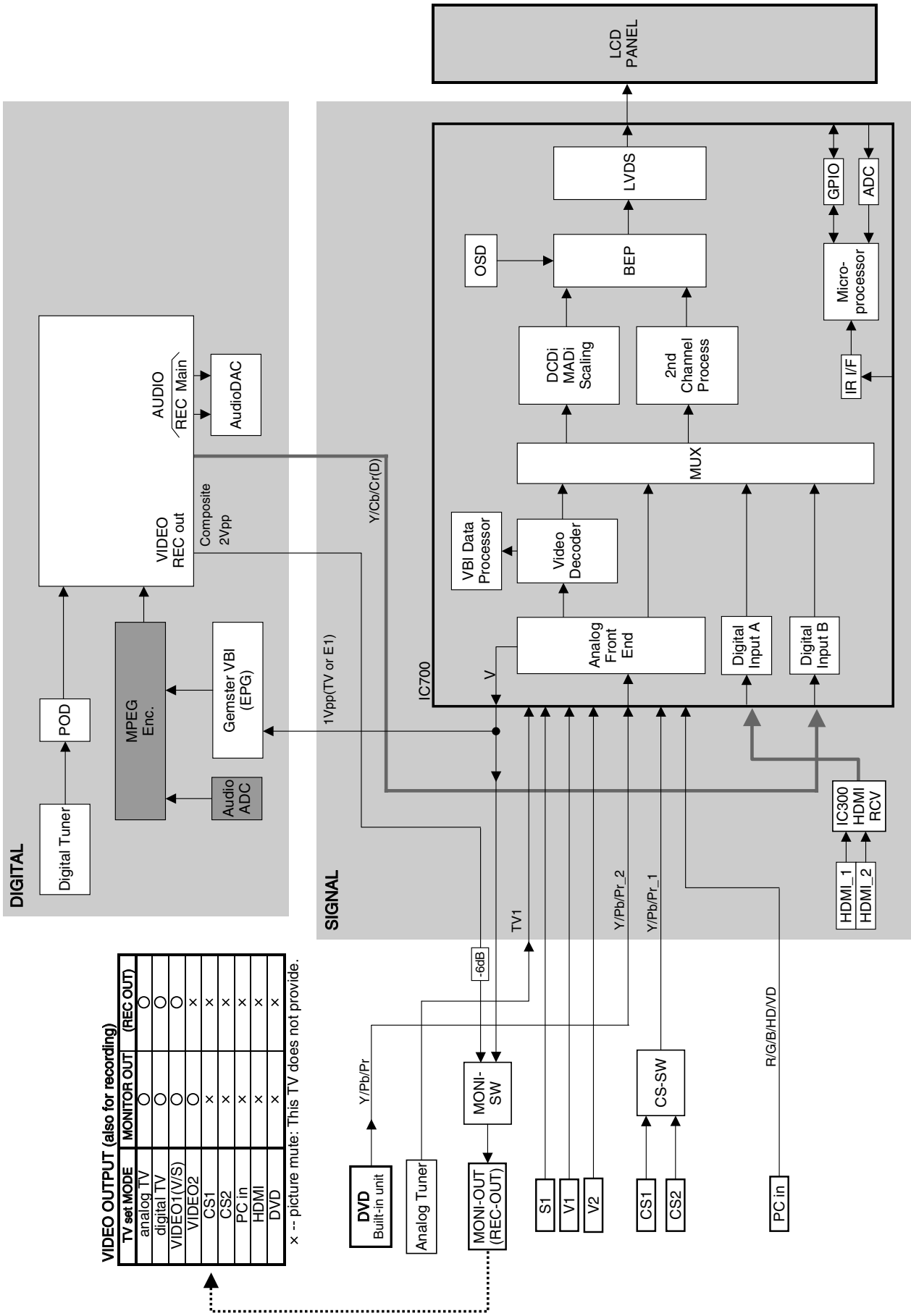
■ SCHEMATIC DIAGRAM STRUCTURE:

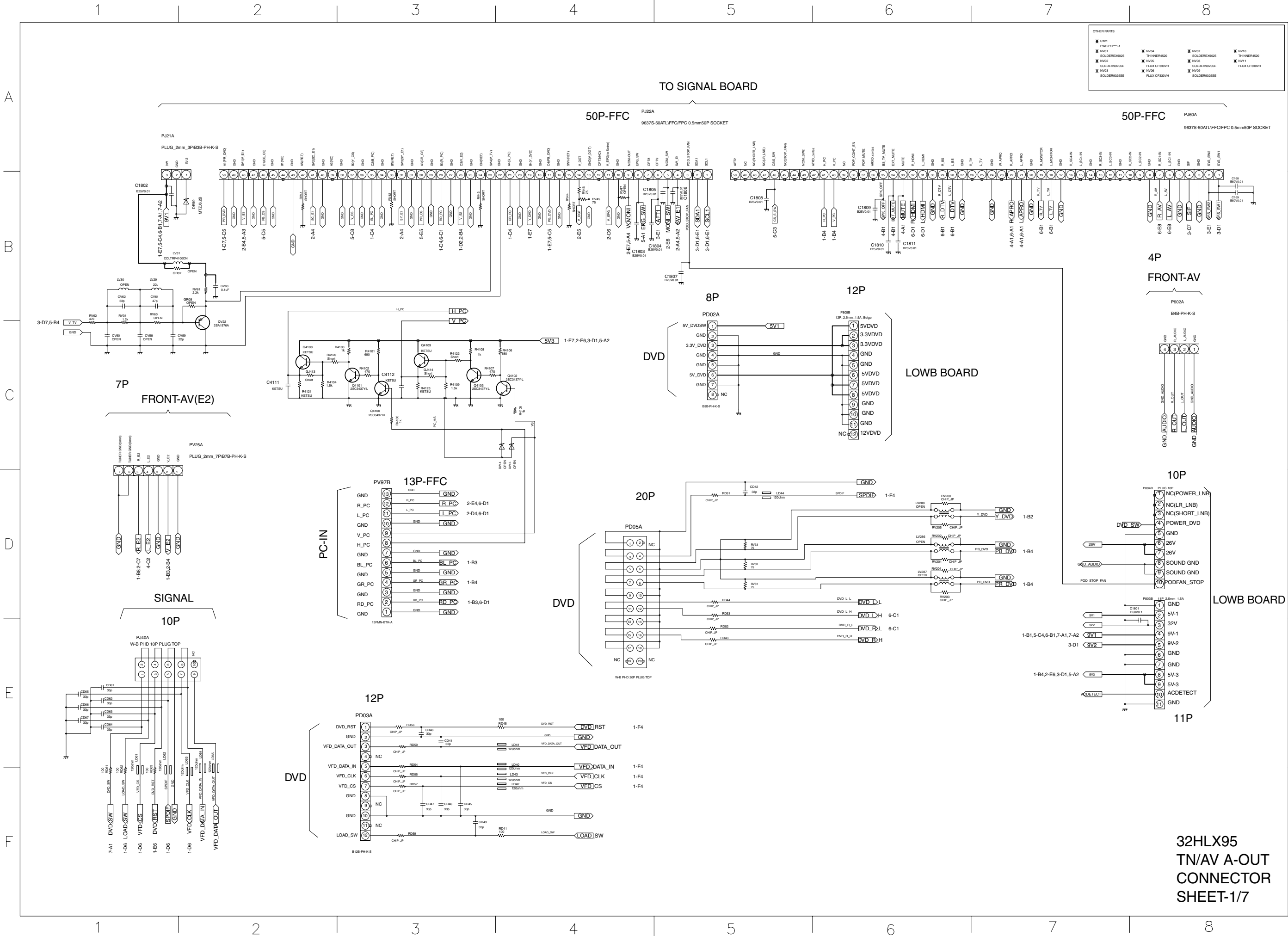
TN/AV A-OUT	CONNECTOR	[SHEET-1/7] 1/134
	AV TERMINAL	[SHEET-2/7] 2/134
	RF-SW & TIF	[SHEET-3/7] 3/134
	A-OUT	[SHEET-4/7] 4/134
	VIDEO-SW	[SHEET-5/7] 5/134
	AUDIO-SW	[SHEET-6/7] 6/134
	DVD OP AMP	[SHEET-7/7] 7/134
FRONT-AV		8/134
LED_RMT		9/134
KEY		10/134
PC-IN		11/134
DVD-KEY		12/134
POWER	CONNECTOR	[SHEET-1/7] 13/134
	RELAY/RUSH PROTECTION	[SHEET-2/7] 14/134
	PFC	[SHEET-3/7] 15/134
	STANDBY-POWER	[SHEET-4/7] 16/134
	RCC POWER	[SHEET-5/7] 17/134
	RESONANCE POWER	[SHEET-6/7] 18/134
	PROTECT AC DETECT	[SHEET-7/7] 19/134
AC-INPUT		20/134
LOWB		[SHEET-1/2] 21/134
		[SHEET-2/2] 22/134
SIGNAL	ANALOG IN	[SHEET-200] 23/134
	D IN A	[SHEET-300] 24/134
	D IN B	[SHEET-301] 25/134
	HDMI (Link, I2C)	[SHEET-302] 26/134
	HDMI Rx#2 (Video/Audio)	[SHEET-303] 27/134
	HDMI Rx#3 (PWR,Audio)	[SHEET-304] 28/134
	HDMI AUDIO PLL	[SHEET-305] 29/134
	HDMI AUDIO DAC	[SHEET-306] 30/134
	HDMI AUDIO OUT	[SHEET-307] 31/134
	HDMI CONTROLLER	[SHEET-308] 32/134
	EEPROM1	[SHEET-309] 33/134
	EEPROM2	[SHEET-310] 34/134
	MICRO I/O	[SHEET-400] 35/134
	OCM MEMORY I/F	[SHEET-401] 36/134
	FLASH MEMORY	[SHEET-402] 37/134
	SYNC SEPA	[SHEET-403] 38/134
	E2P OTHER	[SHEET-404] 39/134
	STD-BY MICOR	[SHEET-405] 40/134
	CORTEZ REG 1	[SHEET-406] 41/134
	CORTEZ REG 2	[SHEET-407] 42/134
	CORTEZ REG 3	[SHEET-408] 43/134
	BOOT CONFIG	[SHEET-409] 44/134
	SERVICE CONNECTOR	[SHEET-410] 45/134
	I2C Switch	[SHEET-411] 46/134
	STBY MICRO for DVD internal	[SHEET-412] 47/134
	DVD 10pin connector	[SHEET-413] 48/134
	I2C Level shift	[SHEET-414] 49/134
	AUDIO	[SHEET-600] 50/134
	AUDIO MSP	[SHEET-601] 51/134
	CORTEZ 1	[SHEET-700] 52/134
	CORTEZ 2	[SHEET-701] 53/134
	DDR I/F	[SHEET-702] 54/134
	DDR SDRAM	[SHEET-703] 55/134
	DDR TERMINATION	[SHEET-704] 56/134

SIGNAL	DCDC CONV.	[SHEET-802]	57/134
	LVDS OUT	[SHEET-900]	58/134
	LVDS OUT(SHARP LCD)	[SHEET-901]	59/134
	Power Connector and Dimming	[SHEET-902]	60/134
	LVDS Power and Others	[SHEET-903]	61/134
SEINE FOR FPD	SEINE RESET/CLOCK/TIMER/IRC	[SHEET-1]	62/134
	SEINE SLOW BUS	[SHEET-2]	63/134
	SLOW BUS ADDRESS REGISTER	[SHEET-3]	64/134
	SEINE IIC/UART	[SHEET-4]	65/134
	SEINE PIO	[SHEET-5]	66/134
	ROM/FLASH	[SHEET-6]	67/134
	M-SYSTEM(NANDFLASHROM)	[SHEET-7]	68/134
	IR	[SHEET-8]	69/134
	GLINK IR-OUT	[SHEET-9]	70/134
	CLOCK GEN.	[SHEET-10]	71/134
	USB I/F	[SHEET-11]	72/134
	UART0 INTERFACE	[SHEET-12]	73/134
	EJTAG CONNECTOR	[SHEET-13]	74/134
	SEINE PCI BUS	[SHEET-14]	75/134
	MPU POWER	[SHEET-16]	76/134
	Ext UART	[SHEET-17]	77/134
	MACPHYTER 1	[SHEET-20]	78/134
		(1/2)	
		(2/2)	
	RJ45	[SHEET-22]	80/134
	TUENR CONNECTOR	[SHEET-100]	81/134
	T313(Signal)	[SHEET-101]	82/134
	1.1VRegulator	[SHEET-102]	83/134
	T313(Power)	[SHEET-103]	84/134
	Seine TS I/F	[SHEET-150]	85/134
	SEINE CAPTURE IN	[SHEET-200]	86/134
	VIDEO POWER	[SHEET-210]	87/134
	SEINE DIGITAL OUT	[SHEET-220]	88/134
	SEINE-BEP IF	[SHEET-221]	89/134
	SEINE DAC OUT	[SHEET-225]	90/134
	DOWN CON OUT DRIVER	[SHEET-226]	91/134
	HD OUT LPF	[SHEET-227]	92/134
	MACRO VCD	[SHEET-240]	93/134
		(1/2)	
		(2/2)	
	VIDEO LPF	[SHEET-242]	95/134
	MPEG Enc. (CLK, SDRAM)	[SHEET-250]	96/134
	MPEG Enc. (AV I/F)	[SHEET-251]	97/134
	MPEG Enc. (STREAM I/F)	[SHEET-252]	98/134
	MPEG Enc. (POWER)	[SHEET-253]	99/134
	LPF, Slicer	[SHEET-260] ..	100/134
	H/V Sync Sep.	[SHEET-261] ..	101/134
	AUDIO POWER	[SHEET-300] ..	102/134
	SEINE AUDIO I/F	[SHEET-301] ..	103/134
	AUDIO DAC	[SHEET-302] ..	104/134
	AUDIO PLL/DAC	[SHEET-303] ..	105/134
	AUDIO VTR OUT	[SHEET-304] ..	106/134
	AUDIO SP OUT	[SHEET-305] ..	107/134
	MPEG2 AUDIO TV IN	[SHEET-306] ..	108/134
	MPEG2 AUDIO ADC	[SHEET-307] ..	109/134
	MPEG2 AUDIO PLL	[SHEET-308] ..	110/134
	AUDIO DAC 0.1CH	[SHEET-309] ..	111/134

SEINE FOR FPD	AUDIO VTR OUT	[SHEET-310] .. 112/134
	MB86619	[SHEET-400] .. 113/134
	MB86619 (POWER)	[SHEET-401] .. 114/134
	CPLD XILINX	[SHEET-700] .. 115/134
	SLOWBUS	[SHEET-701] .. 116/134
	PODVPP	[SHEET-702] .. 117/134
	POD I/F	[SHEET-703] .. 118/134
	PODVCC	[SHEET-704] .. 119/134
	DDR SDRAM I/F	[SHEET-901] .. 120/134
	DDR 1	[SHEET-902] .. 121/134
	DDR 2	[SHEET-903] .. 122/134
	DDR 3	[SHEET-904] .. 123/134
	DDR 4	[SHEET-905] .. 124/134
	DDR POWER	[SHEET-906] .. 125/134
	TERMINATOR	[SHEET-907] .. 126/134
	VCXO	[SHEET-941] .. 127/134
	SEINE VDD/VSS	[SHEET-950] .. 128/134
	SIGNAL CONNECTOR	[SHEET-960] .. 129/134
	POWER CONNECTOR	[SHEET-961] .. 130/134
	Signal filter	[SHEET-964] .. 131/134
D-TUNER	TUNER CONNECTOR(TUNER)	[SHEET-104] .. 132/134
	OOB FDC	[SHEET-105] .. 133/134
	FAT TUNER	[SHEET-106] .. 134/134

CIRCUIT BLOCK DIAGRAM



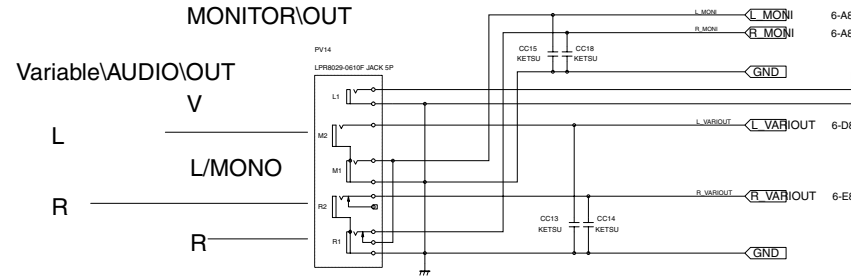
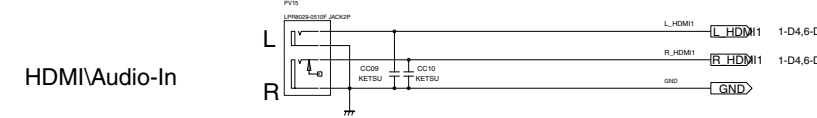
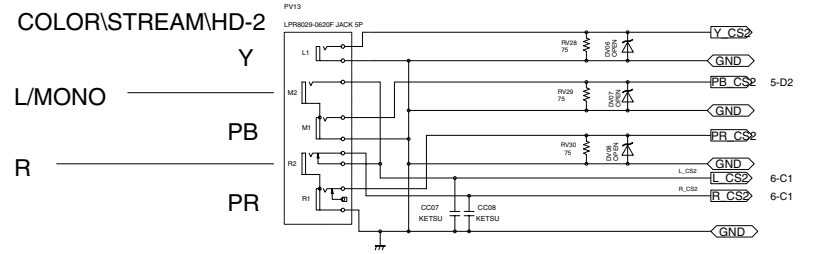
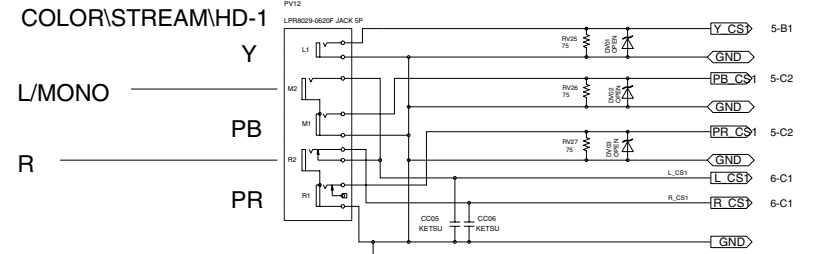
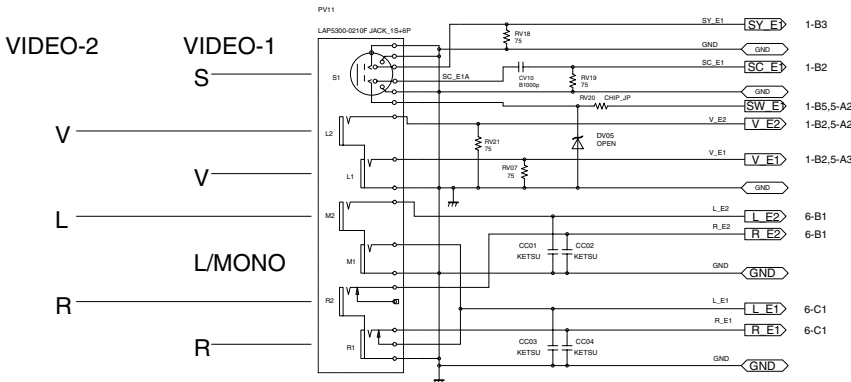


32HLX95
TN/AV A-OUT
CONNECTOR
SHEET-1/7

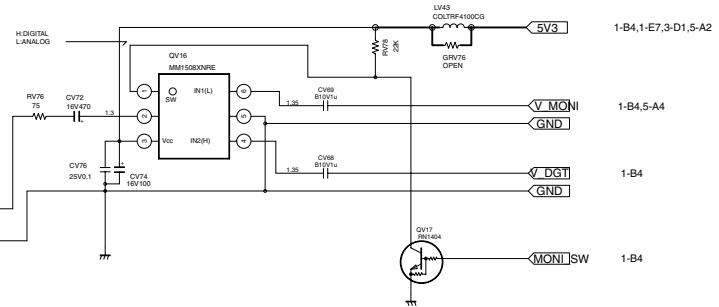
A

A

(TOP SIDE)



(BOTTOM SIDE)



B

B

C

C

D

D

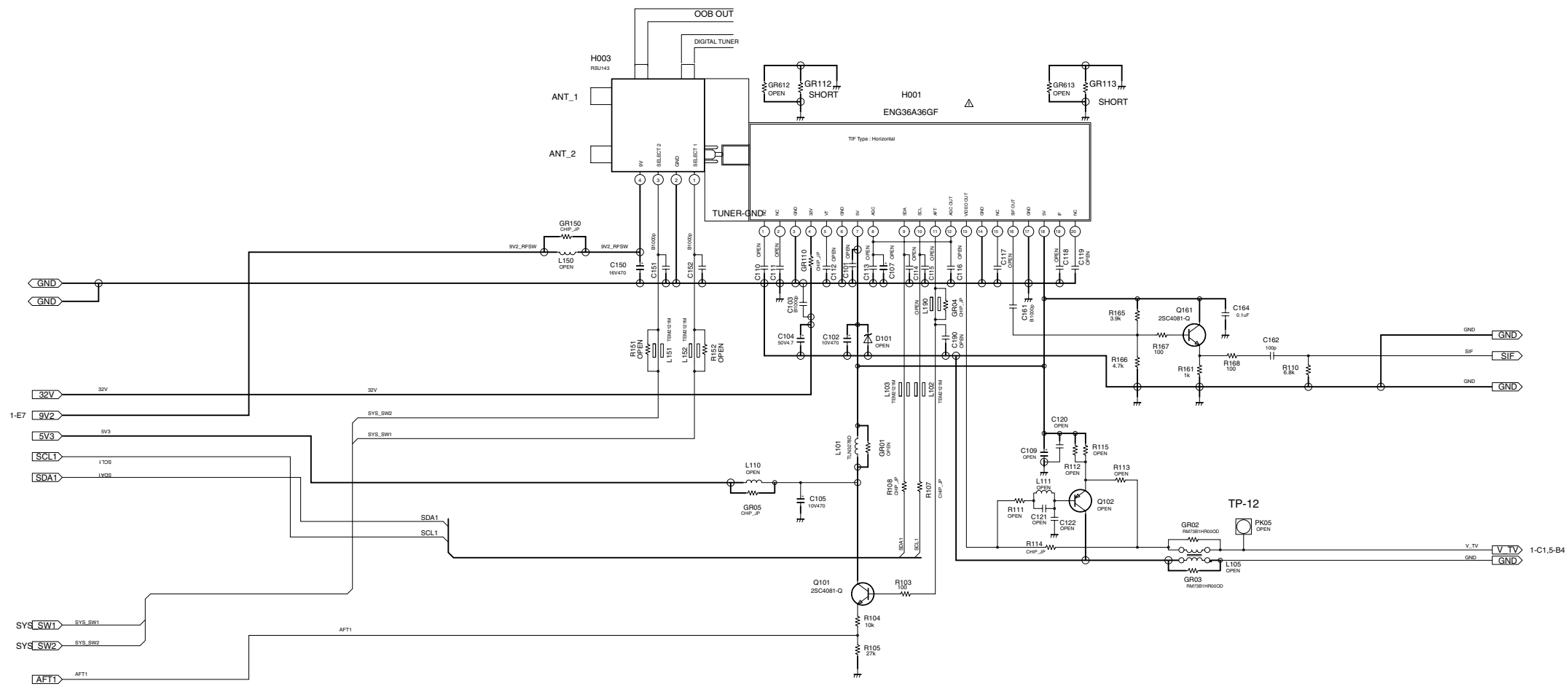
E

E

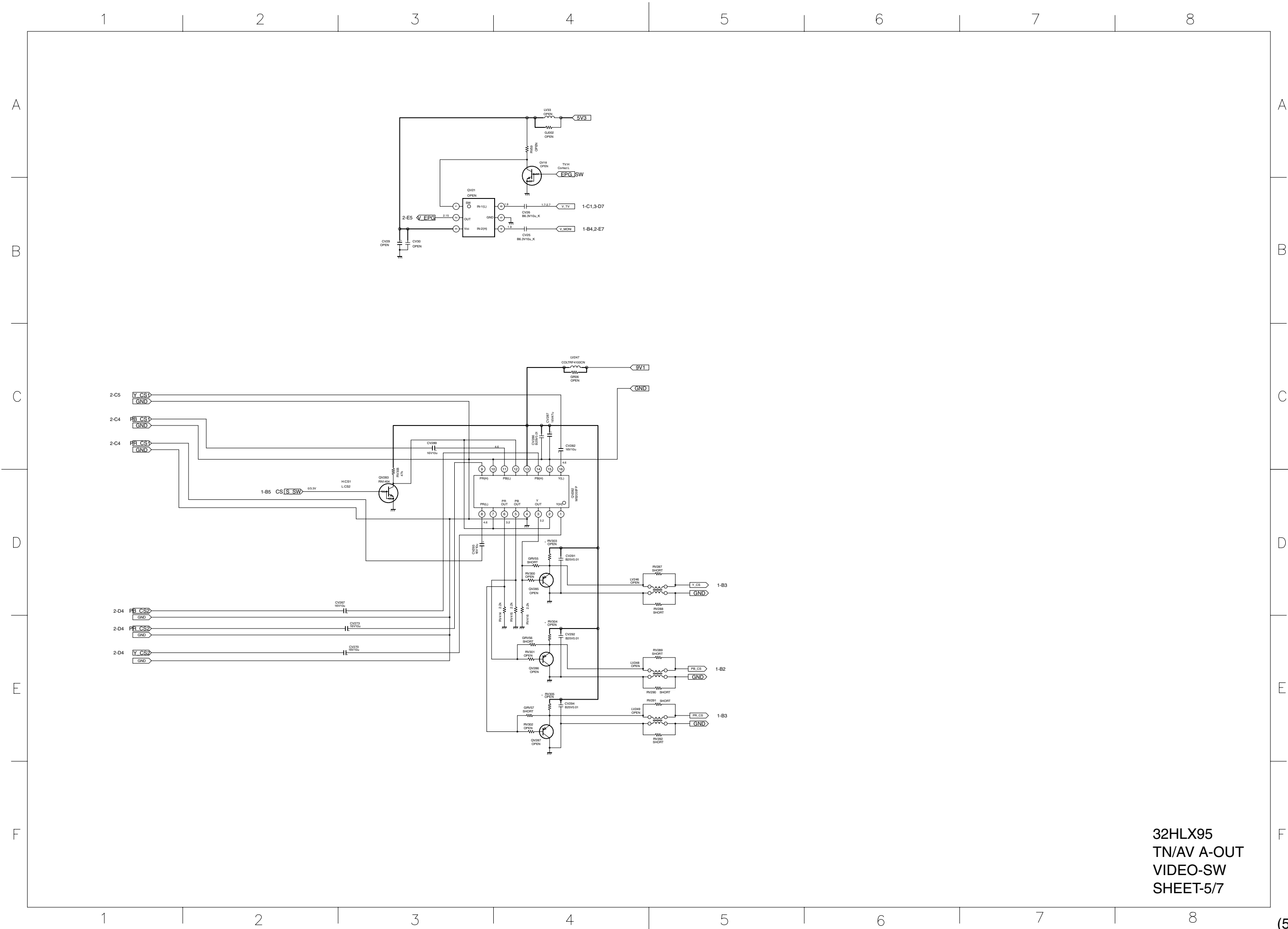
F

F

32HLX95
TN/AV A-OUT
AV TERMINAL
SHEET-2/7

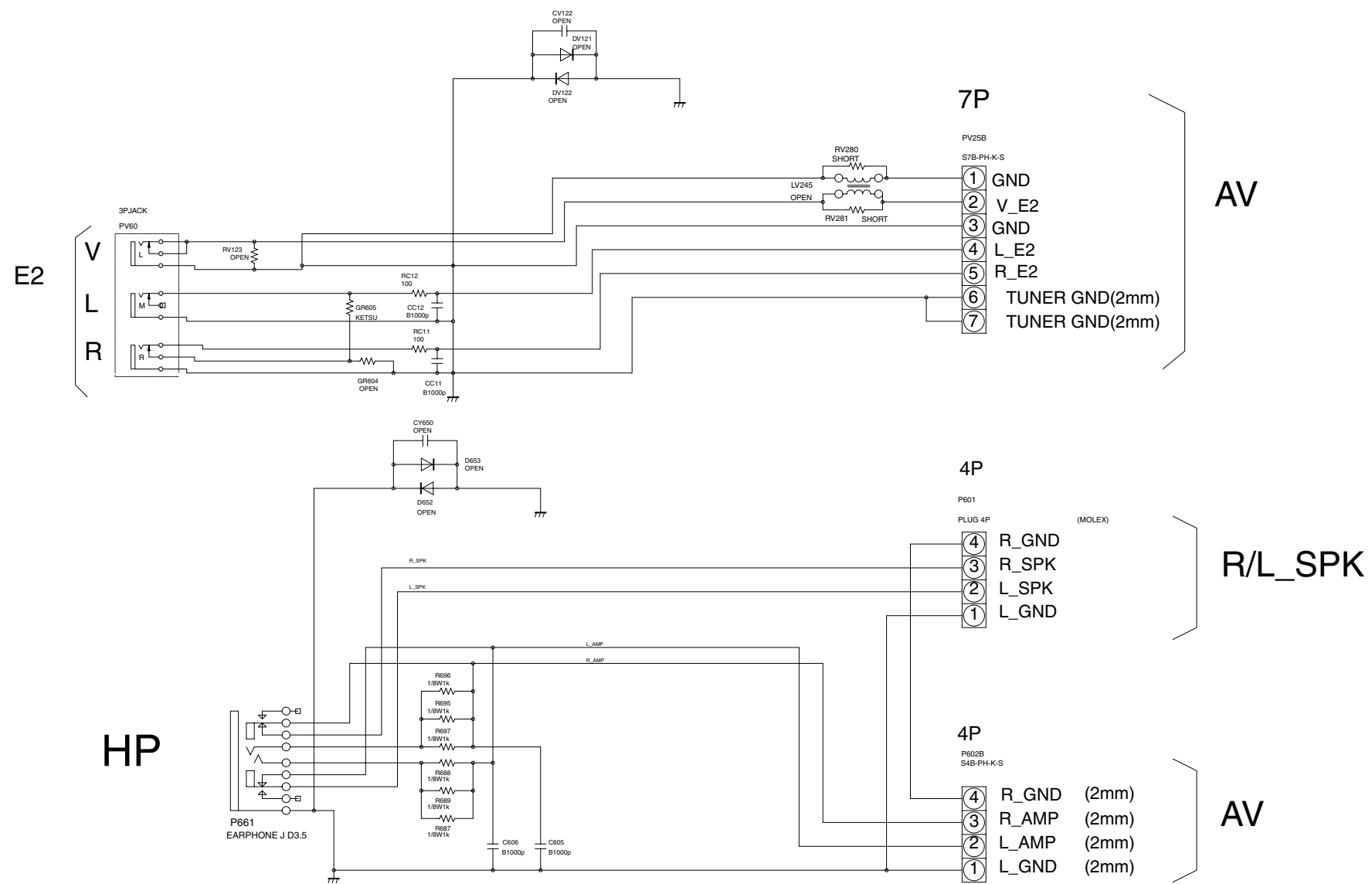


32HLX95
TN/AV A-OUT
RF-SW & TIF
SHEET-3/7

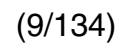




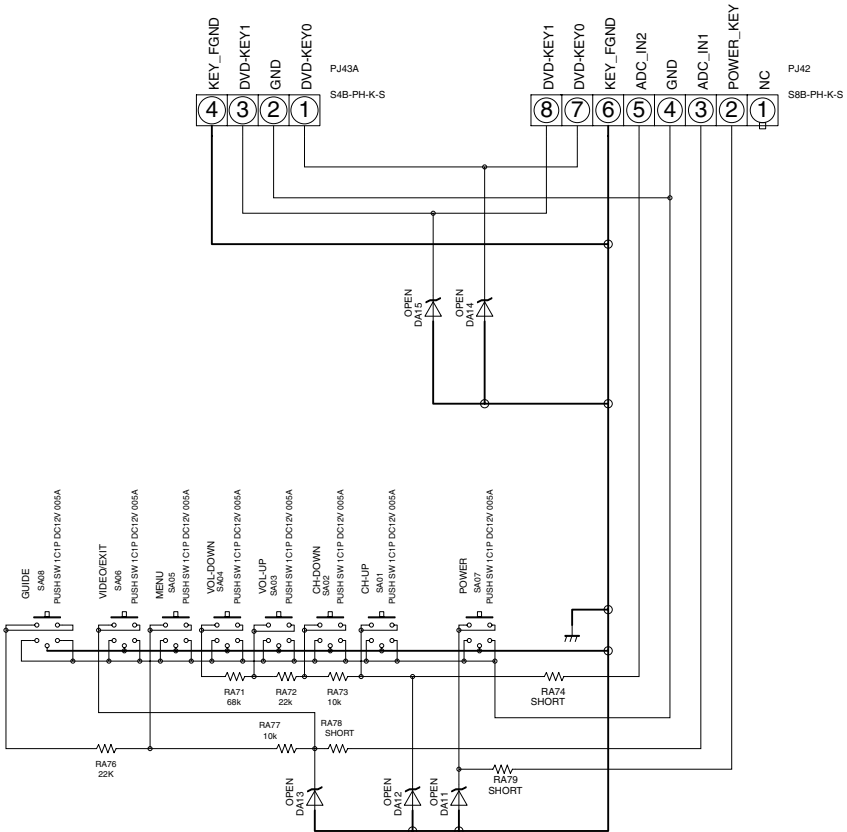
OTHER PARTS
✖ U122
PWB PD****-2



32HLX95
FRONT-AV



OTHER PARTS
✖ U104 PWB PD****-4



32HLX95
KEY

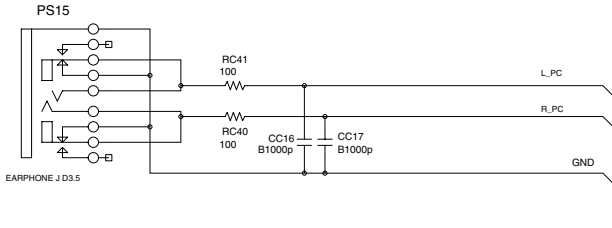
A

B

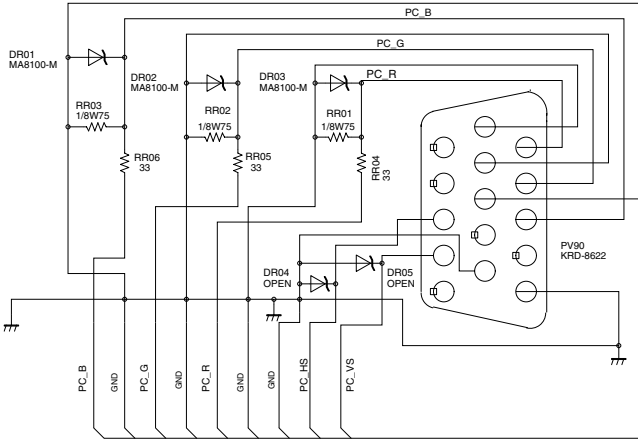
A

B

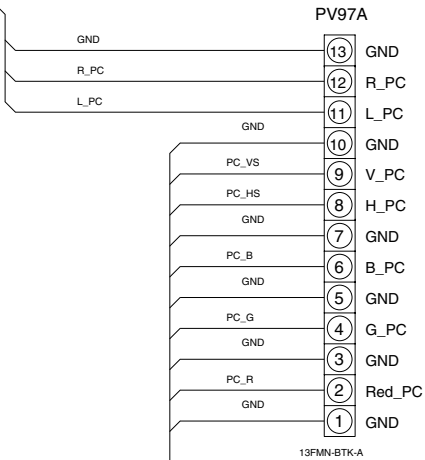
PC-Audio



PC-DSUB



13P-FFC



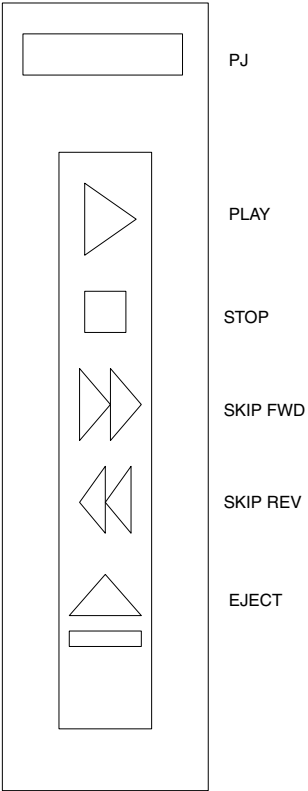
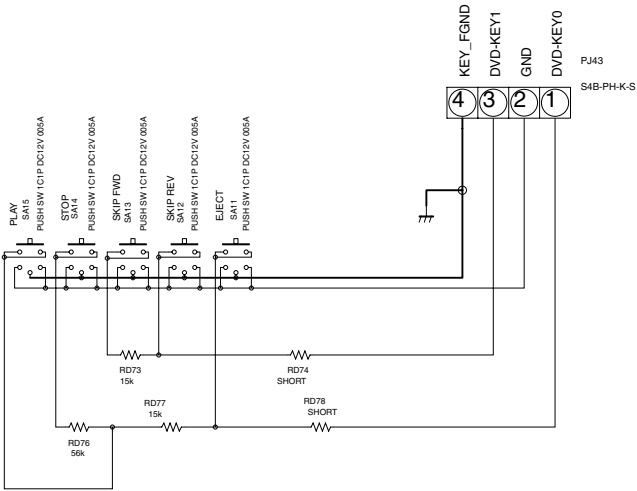
AV-Terminal

32HLX95
PC-IN

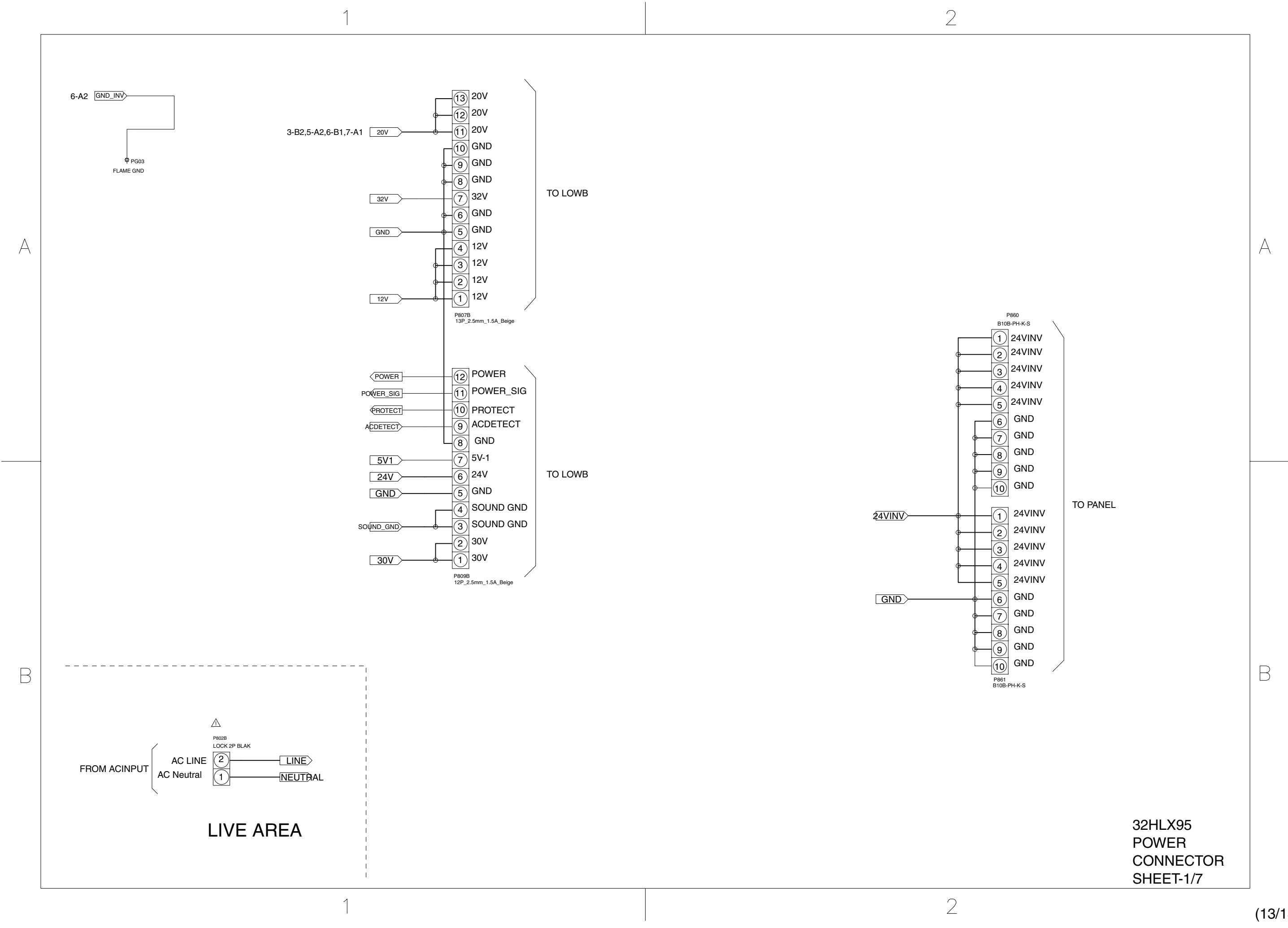
OTHER PARTS

✱ U106

PWB PD****-6



32HLX95
DVD-KEY

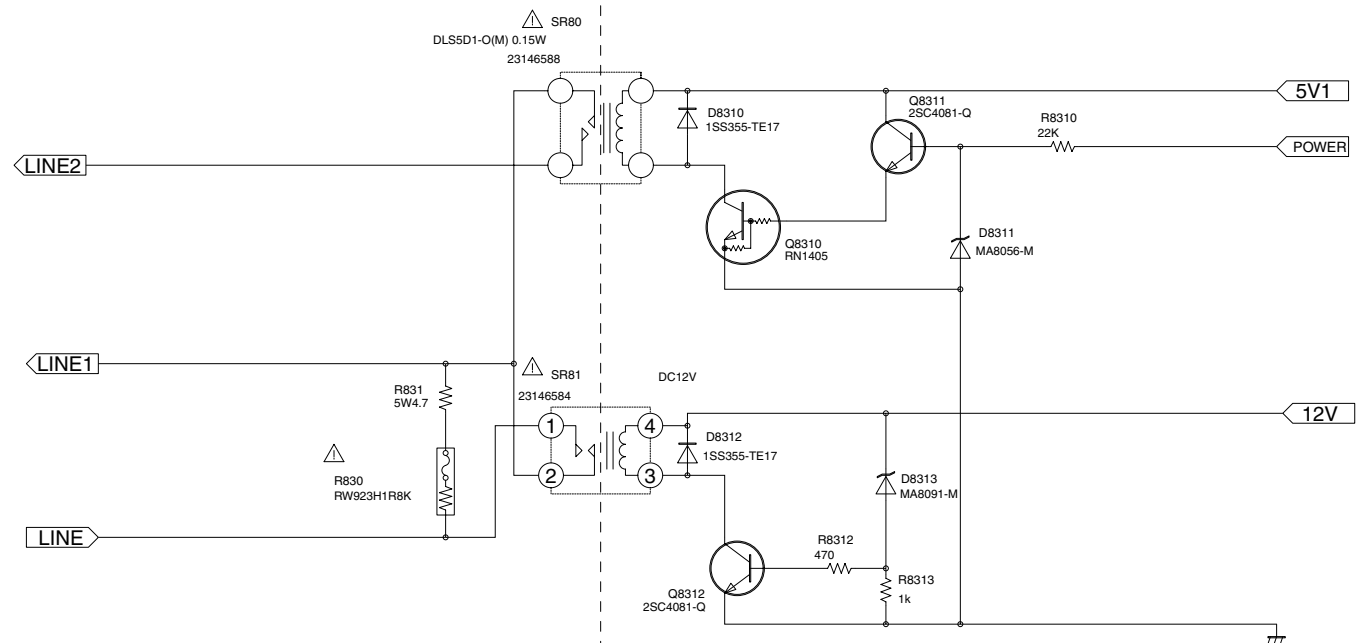


A

A

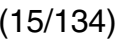
B

B



LIVE AREA

32HLX95
POWER
RELAY/RUSH PROTECTION
SHEET-2/7



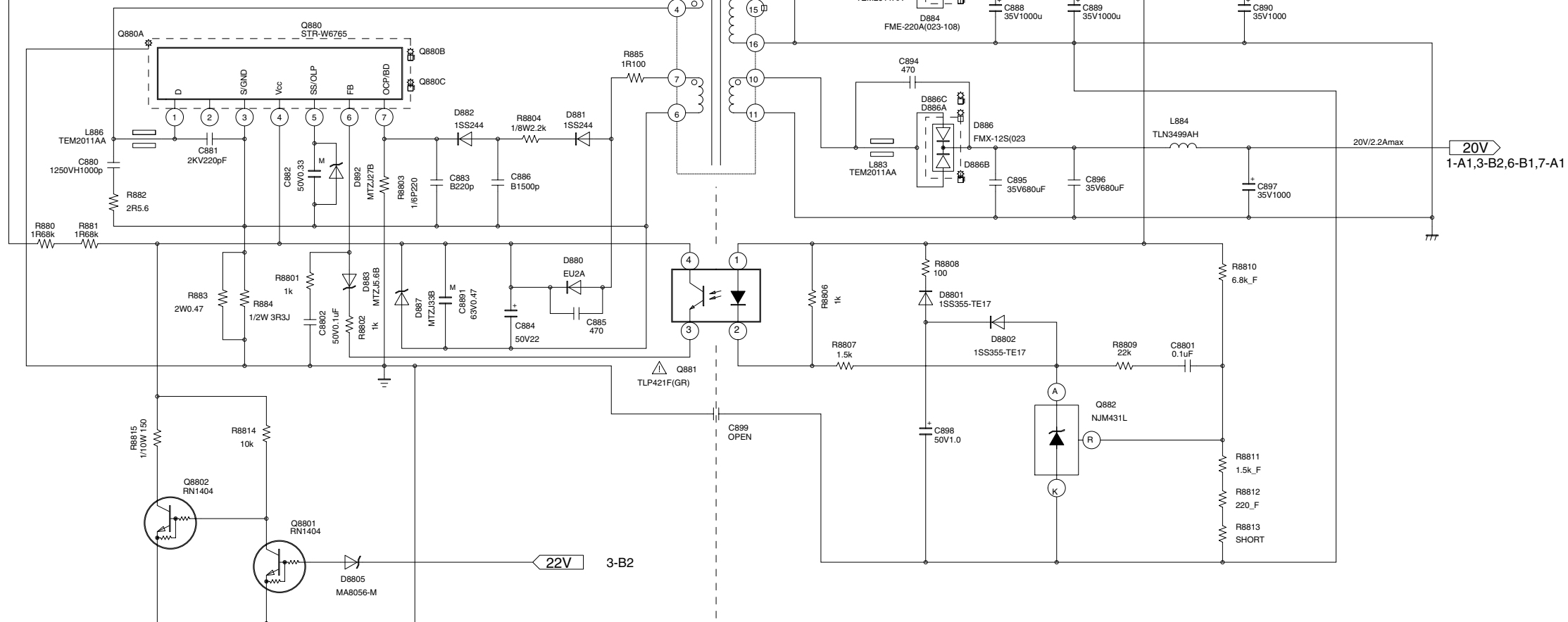
1

2

LIVE AREA

PFC OUT
3-A2,6-A1,7-A1

370V

32HLX95
POWER
RCC POWER
SHEET-5/7

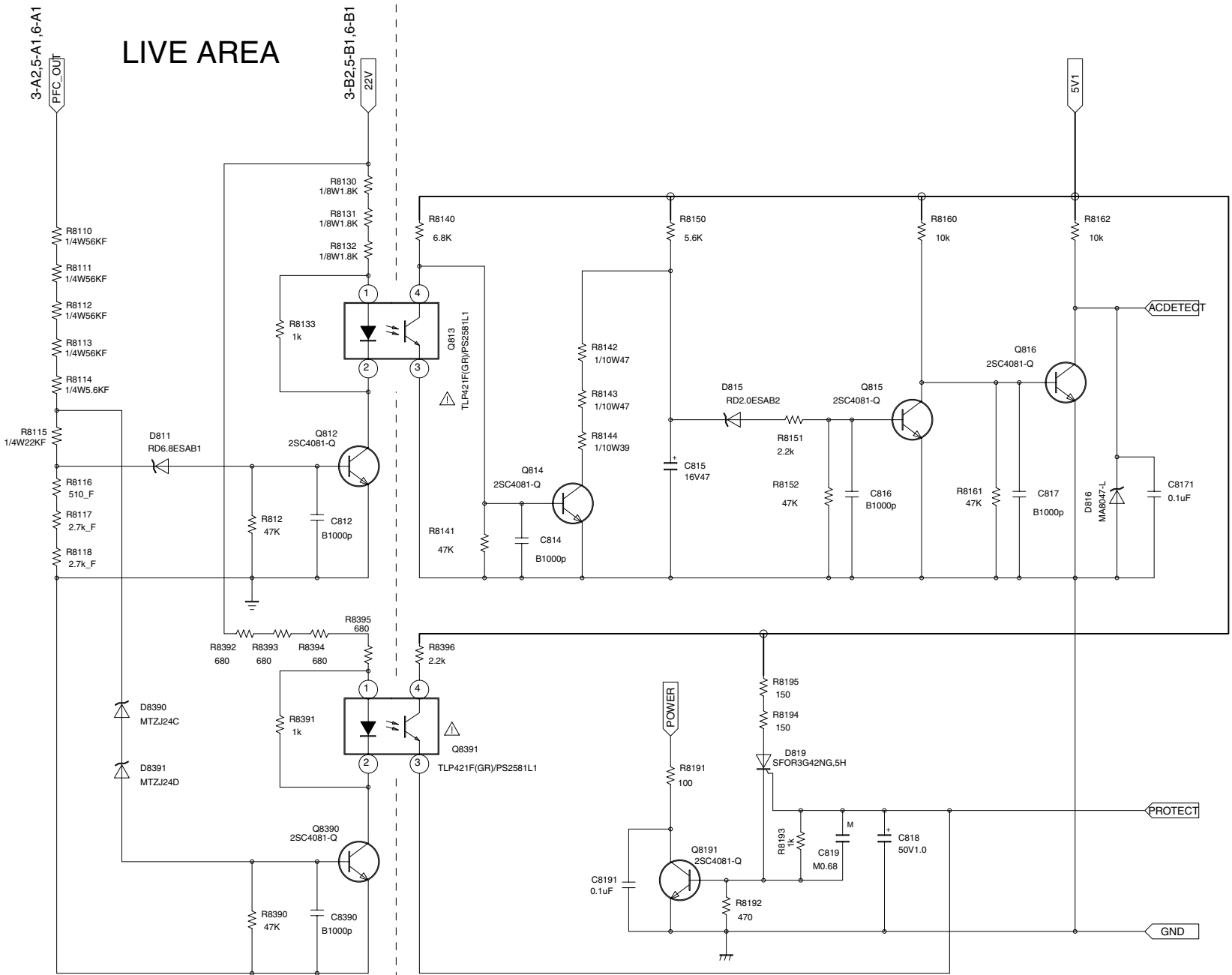
1

2



32HLX95
POWER
RESONANCE POWER
SHEET-6/7

LIVE AREA



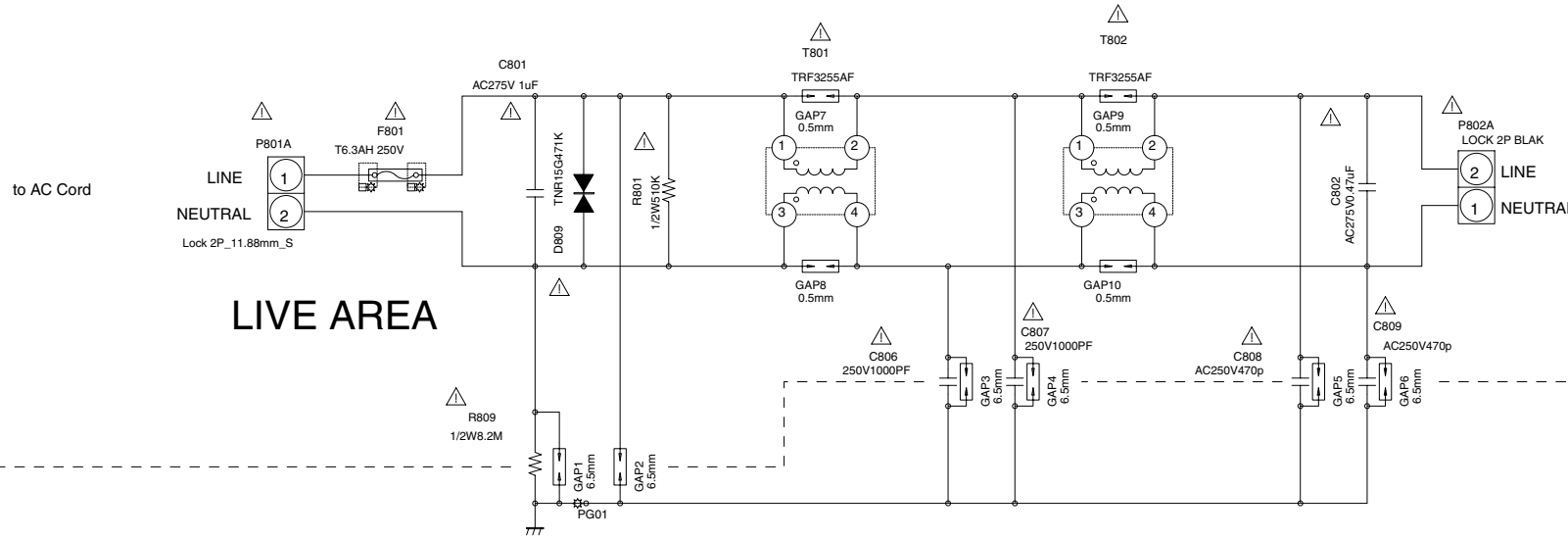
32HLX95
POWER
PROTECT AC DETECT
SHEET-7/7

A

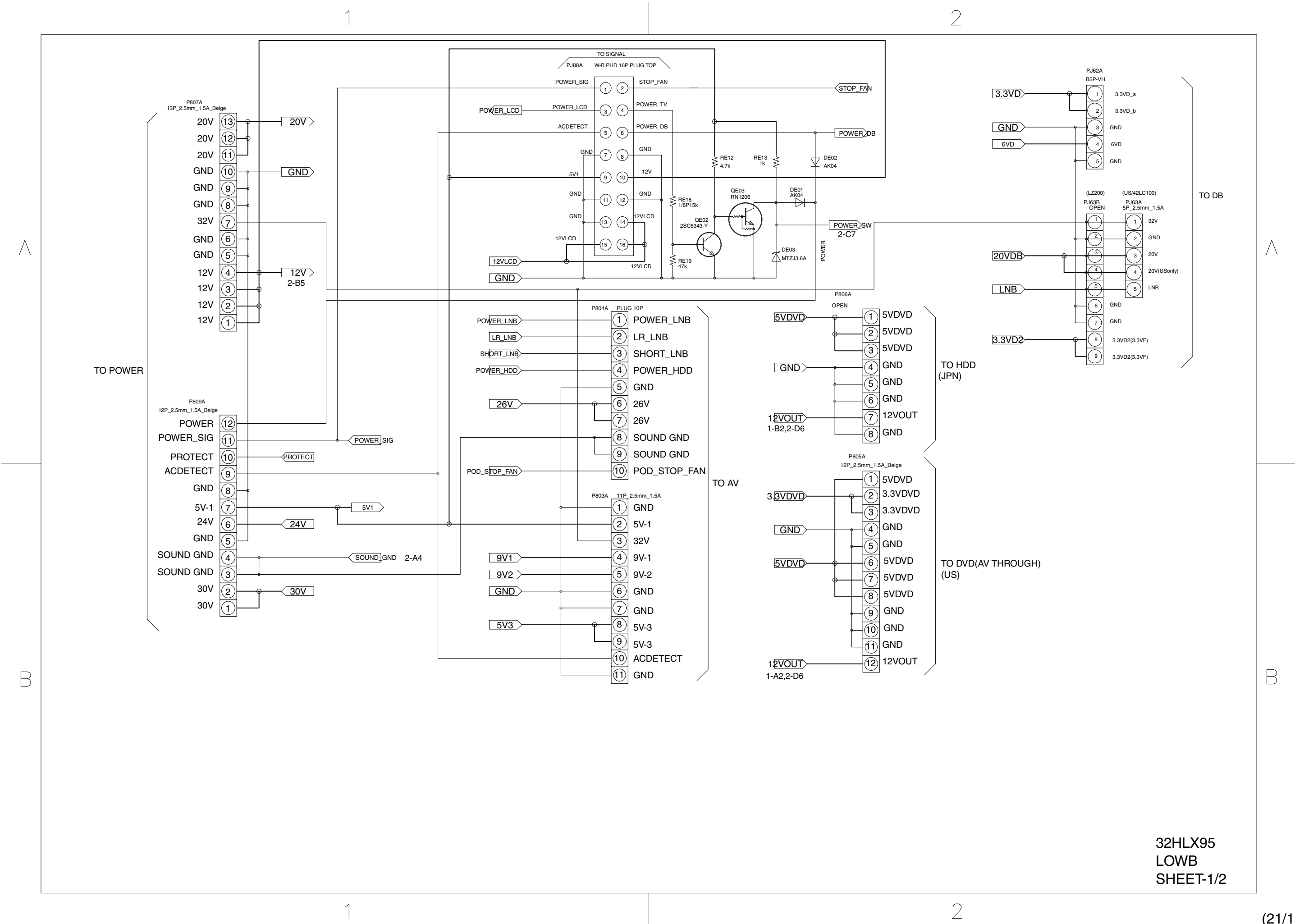
A

B

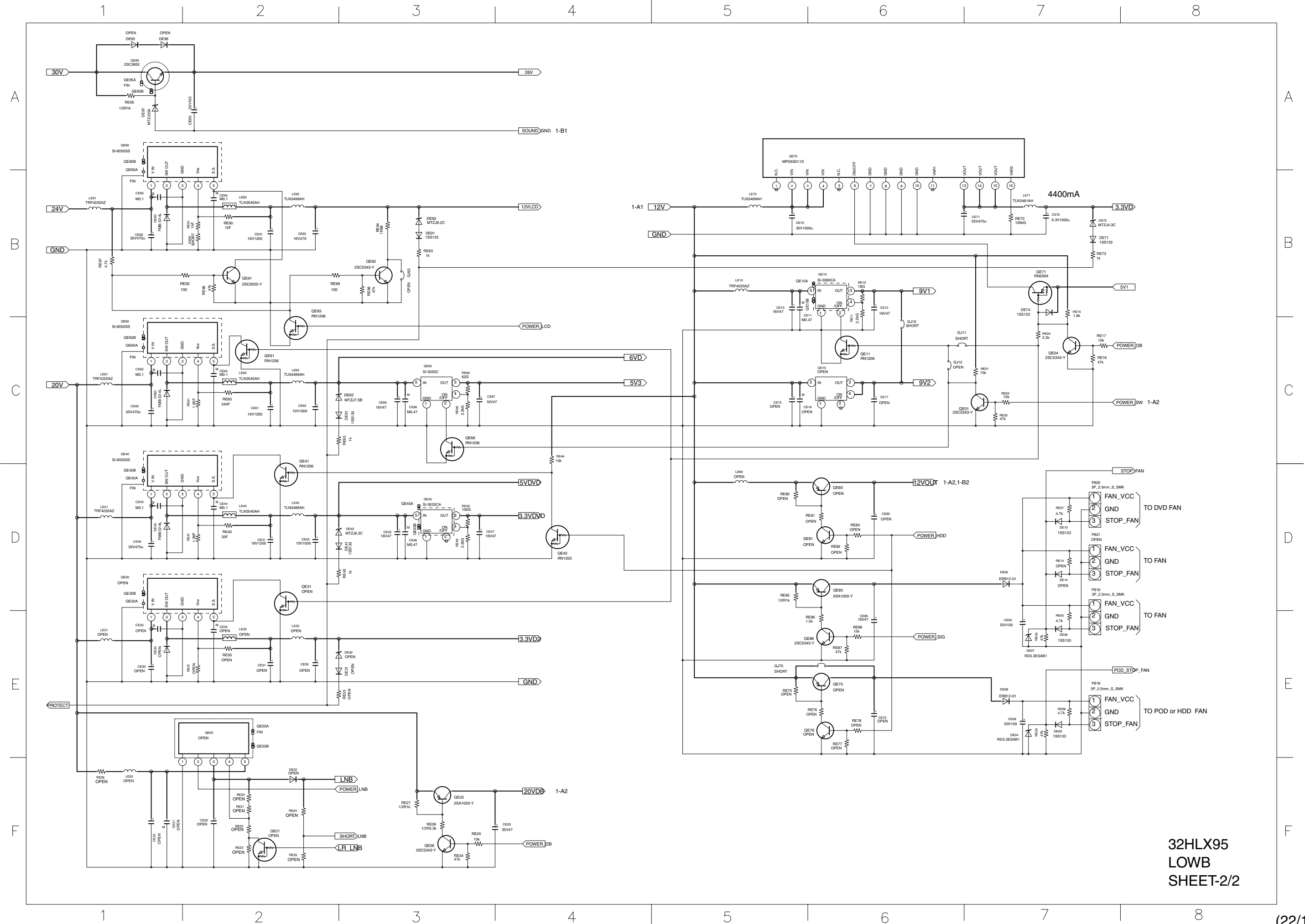
B

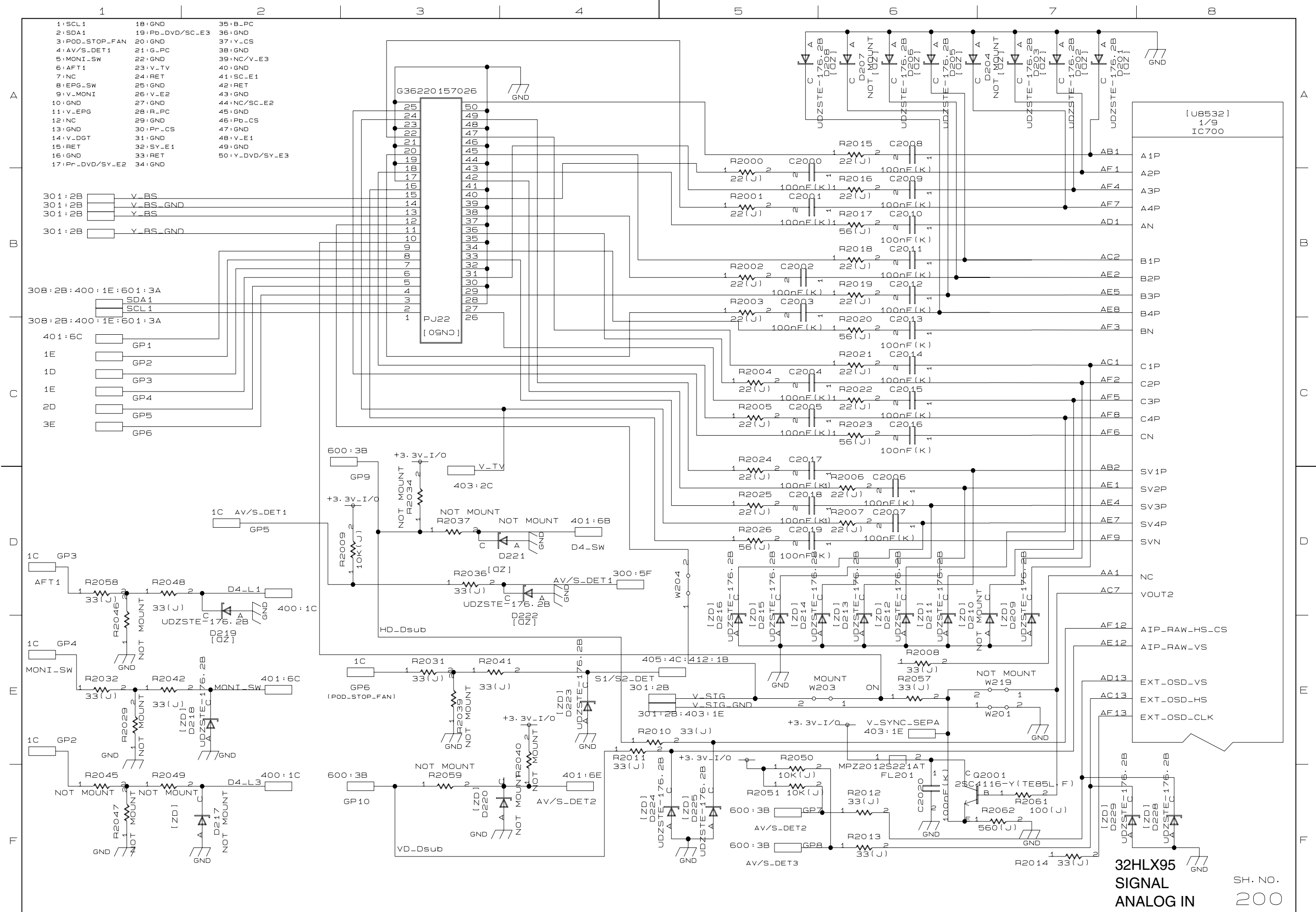


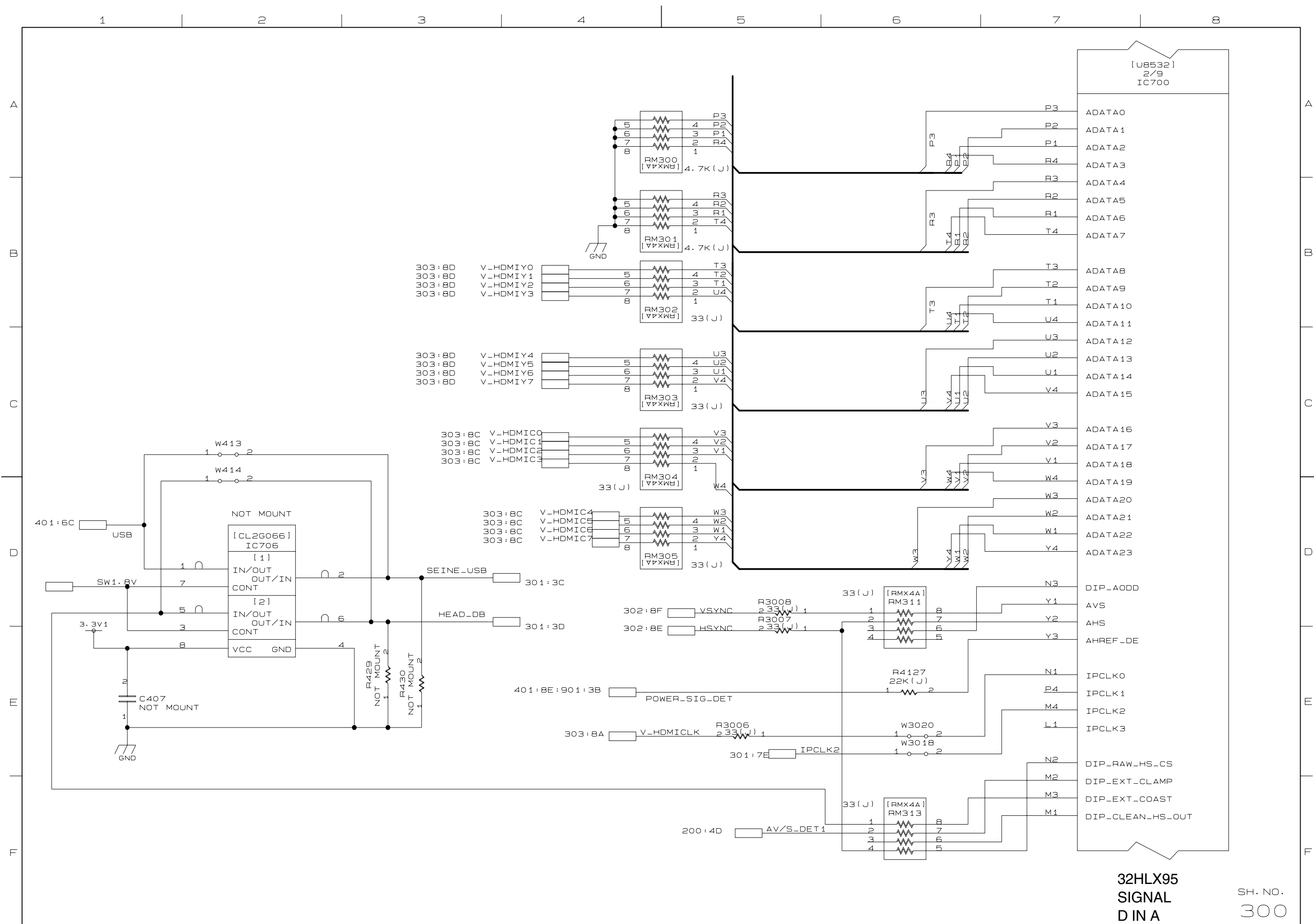
32HLX95
AC-INPUT



32HLX95
LOWB
SHEET-1/2

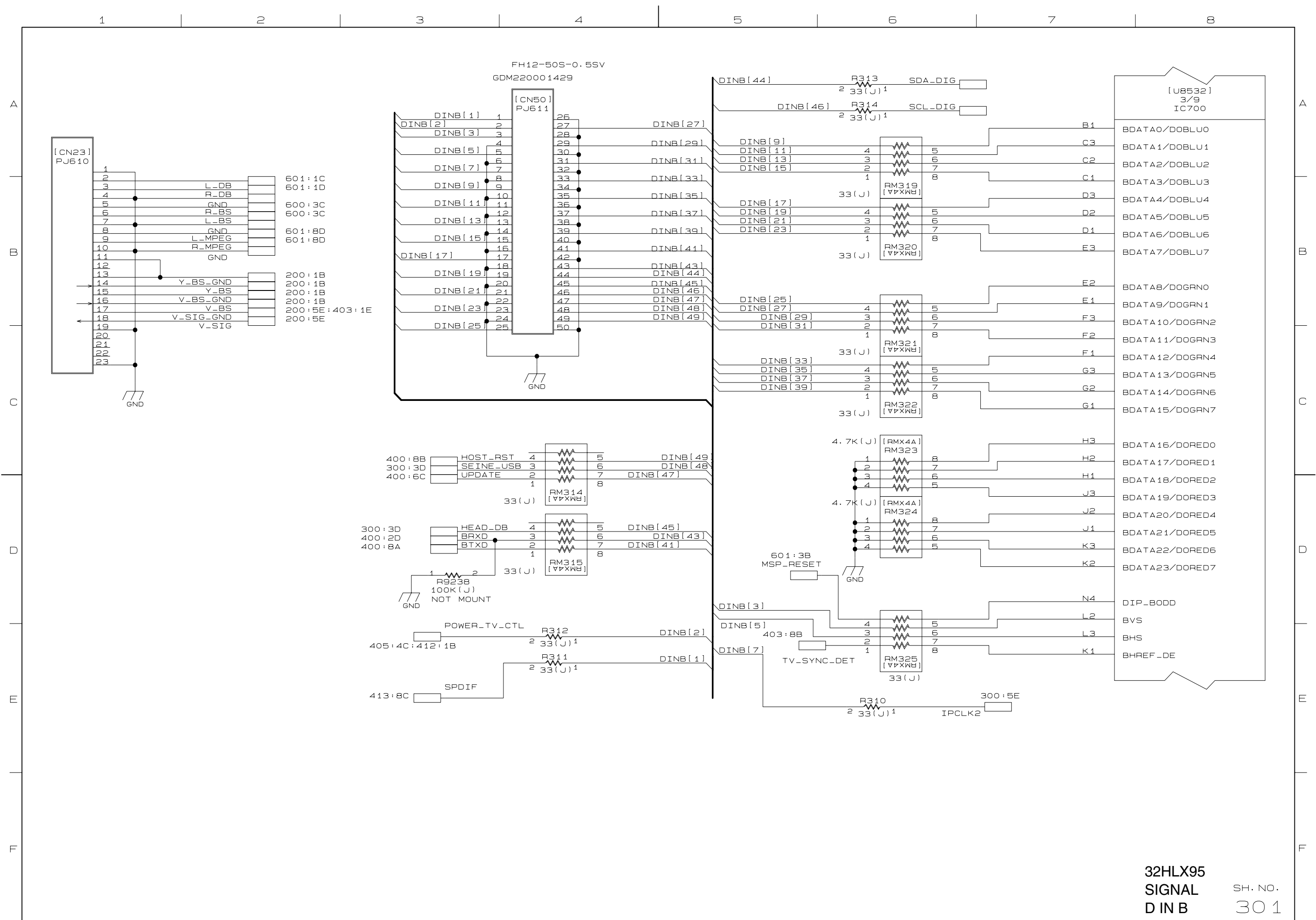


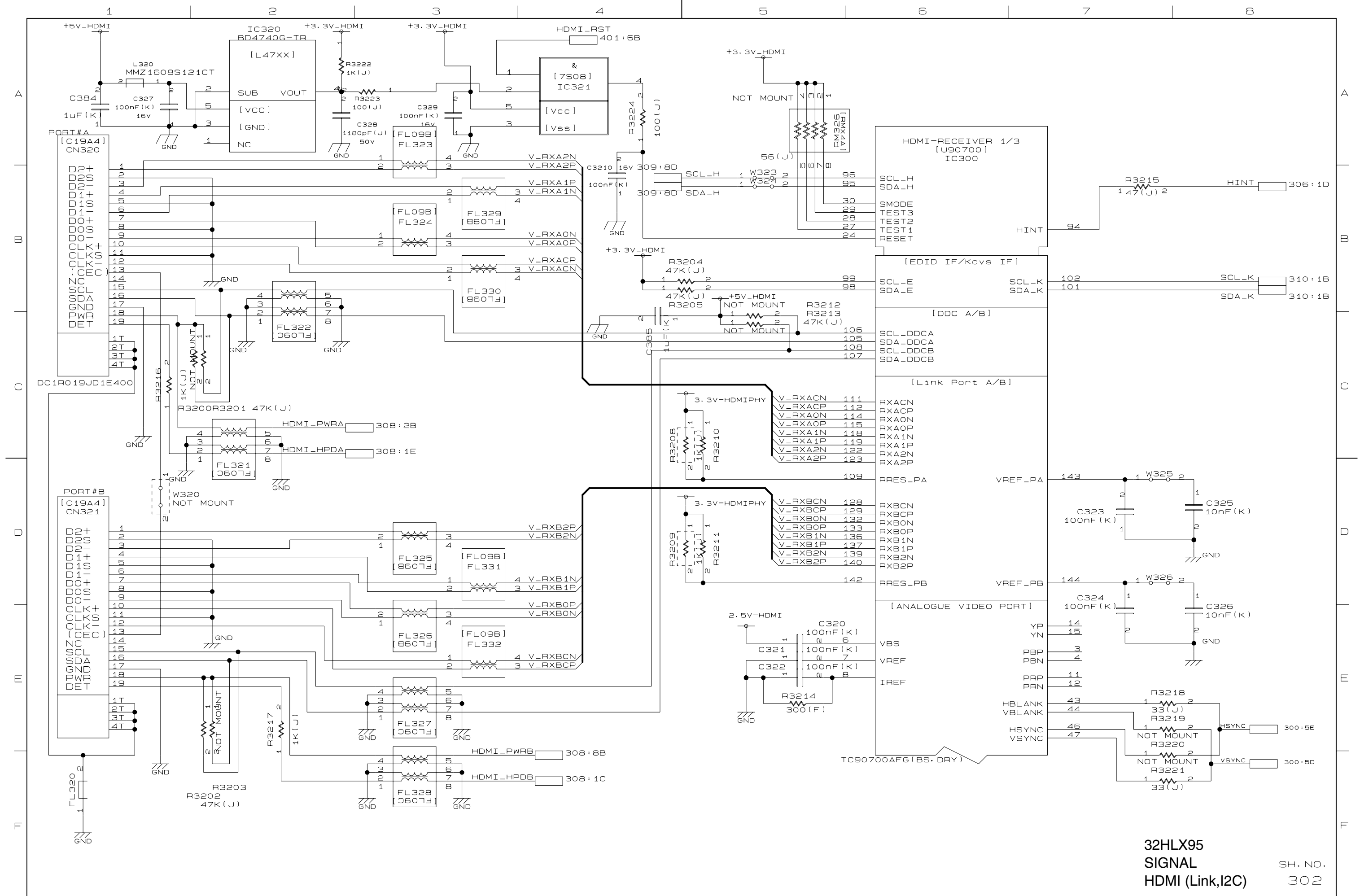


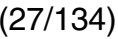


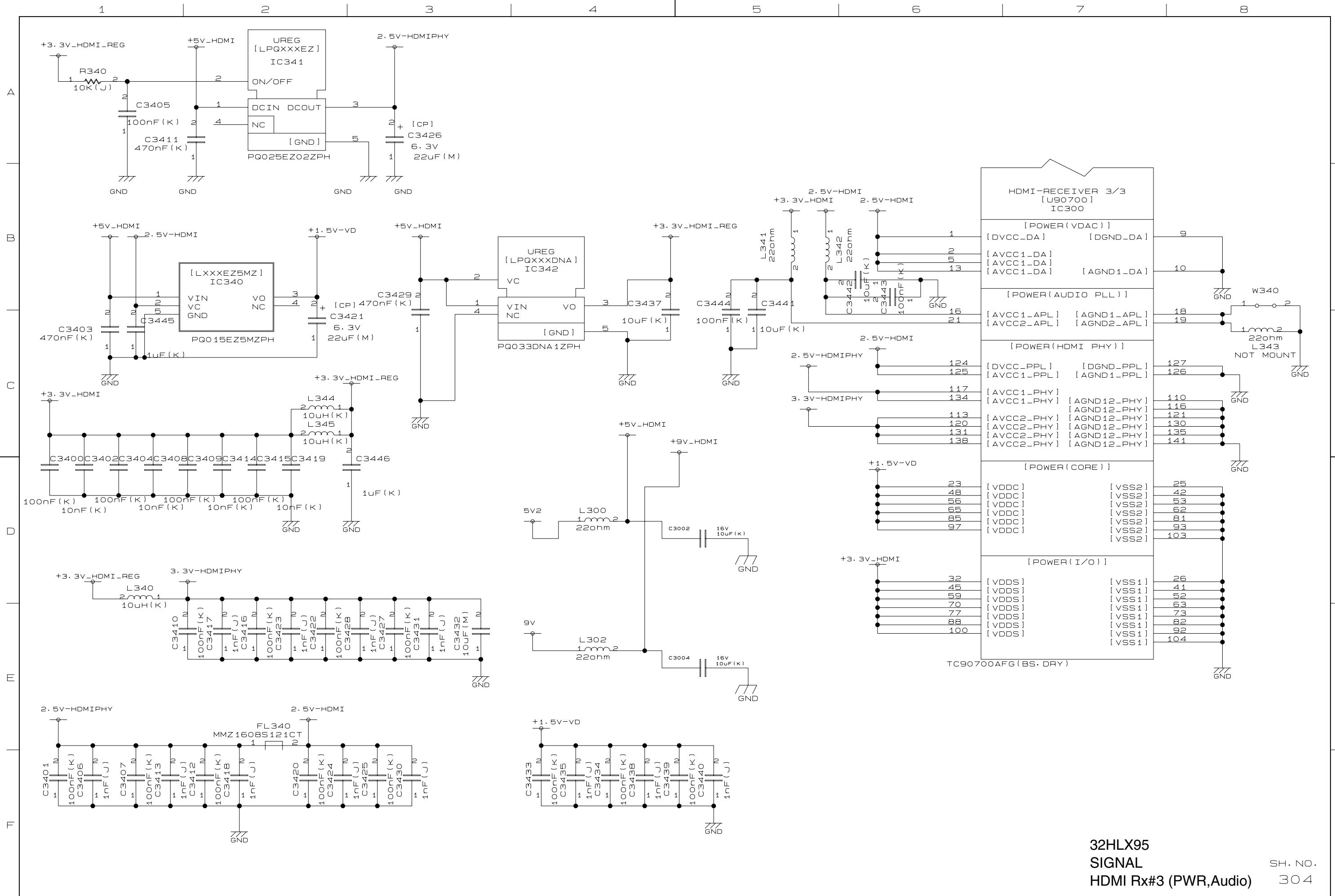
32HLX95
SIGNAL
D IN A

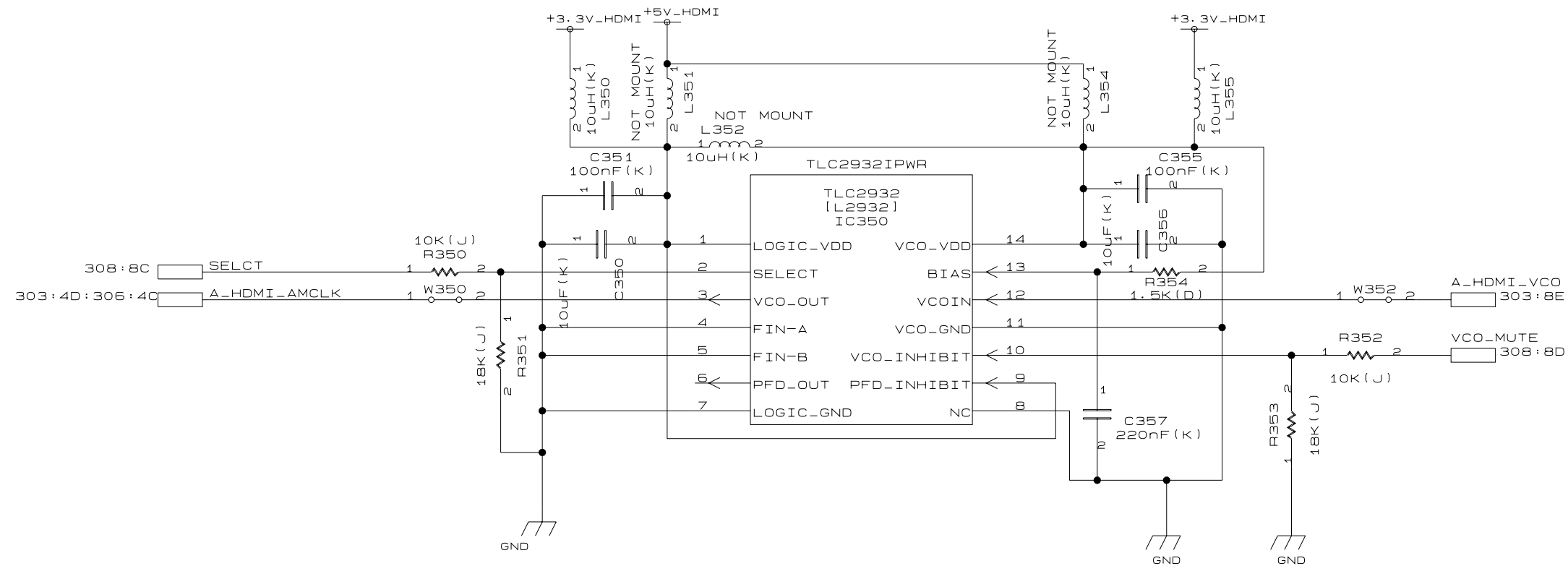
SH. NO.
300

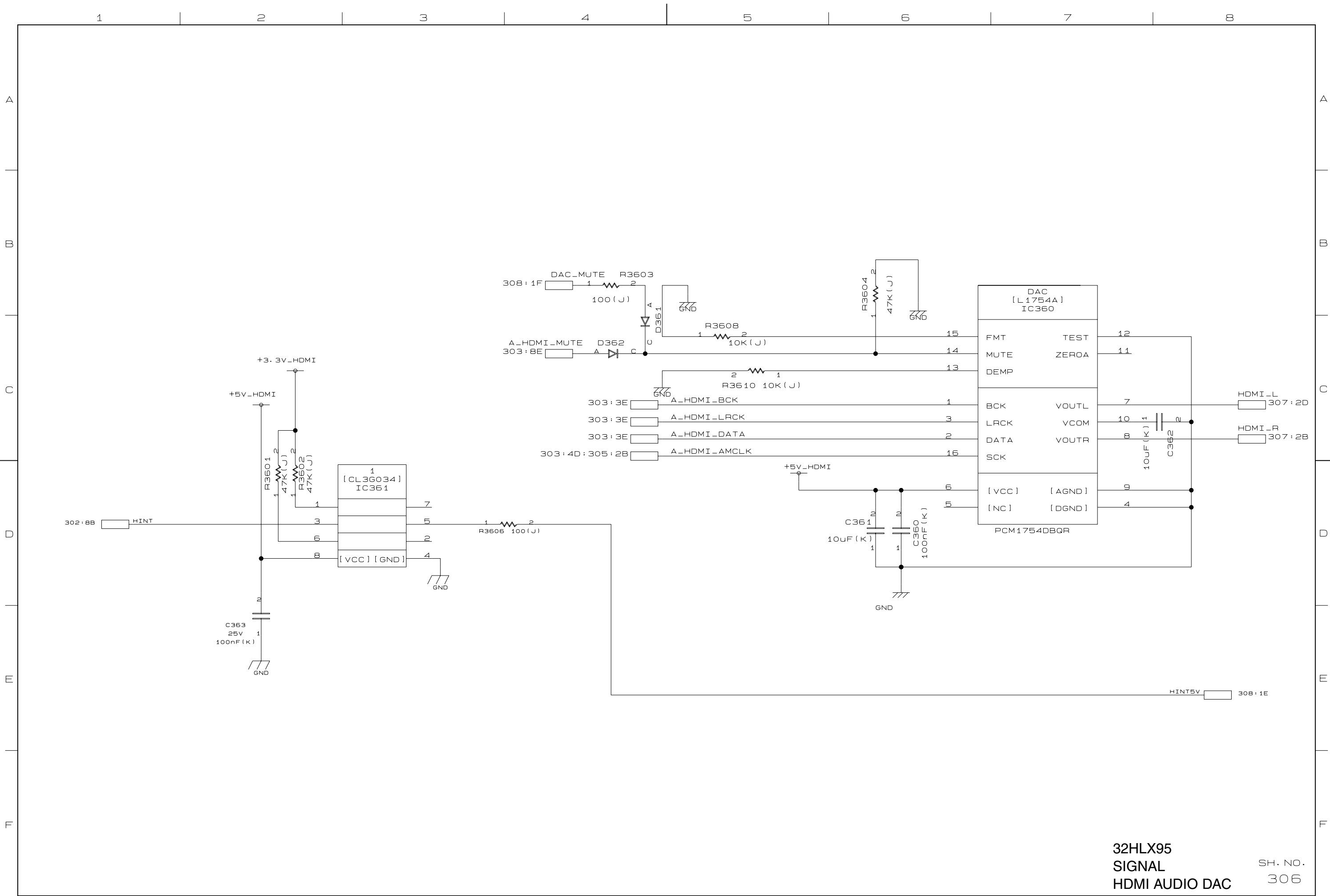


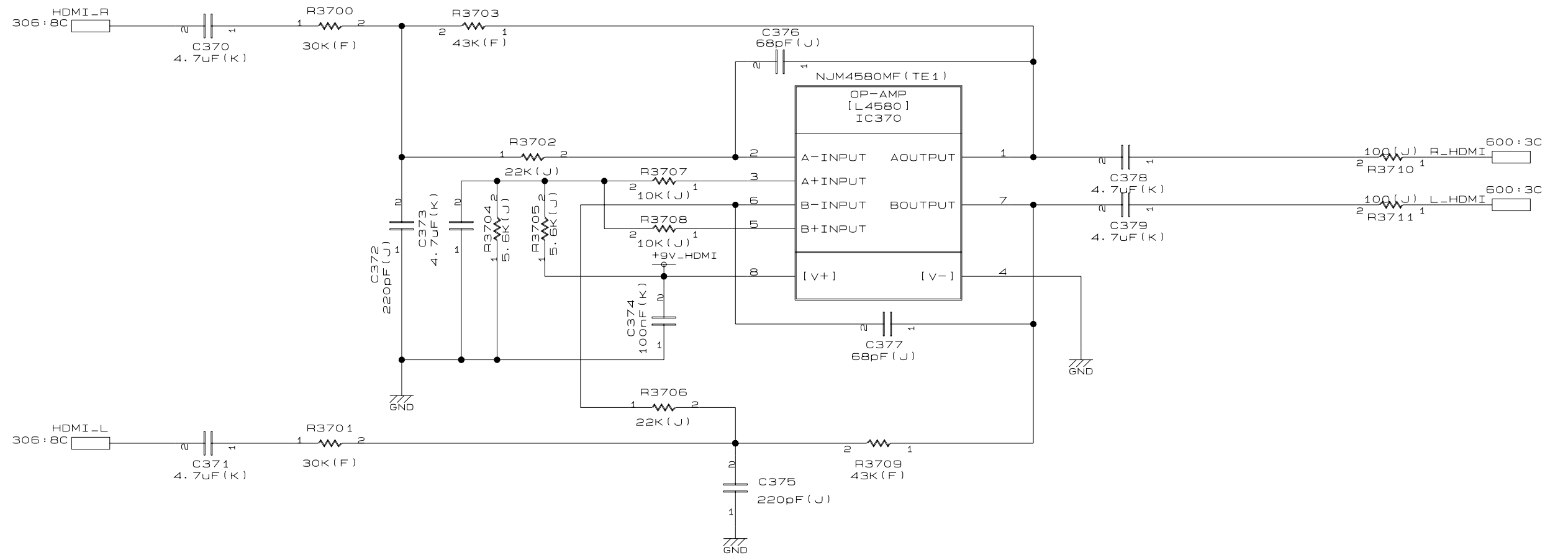






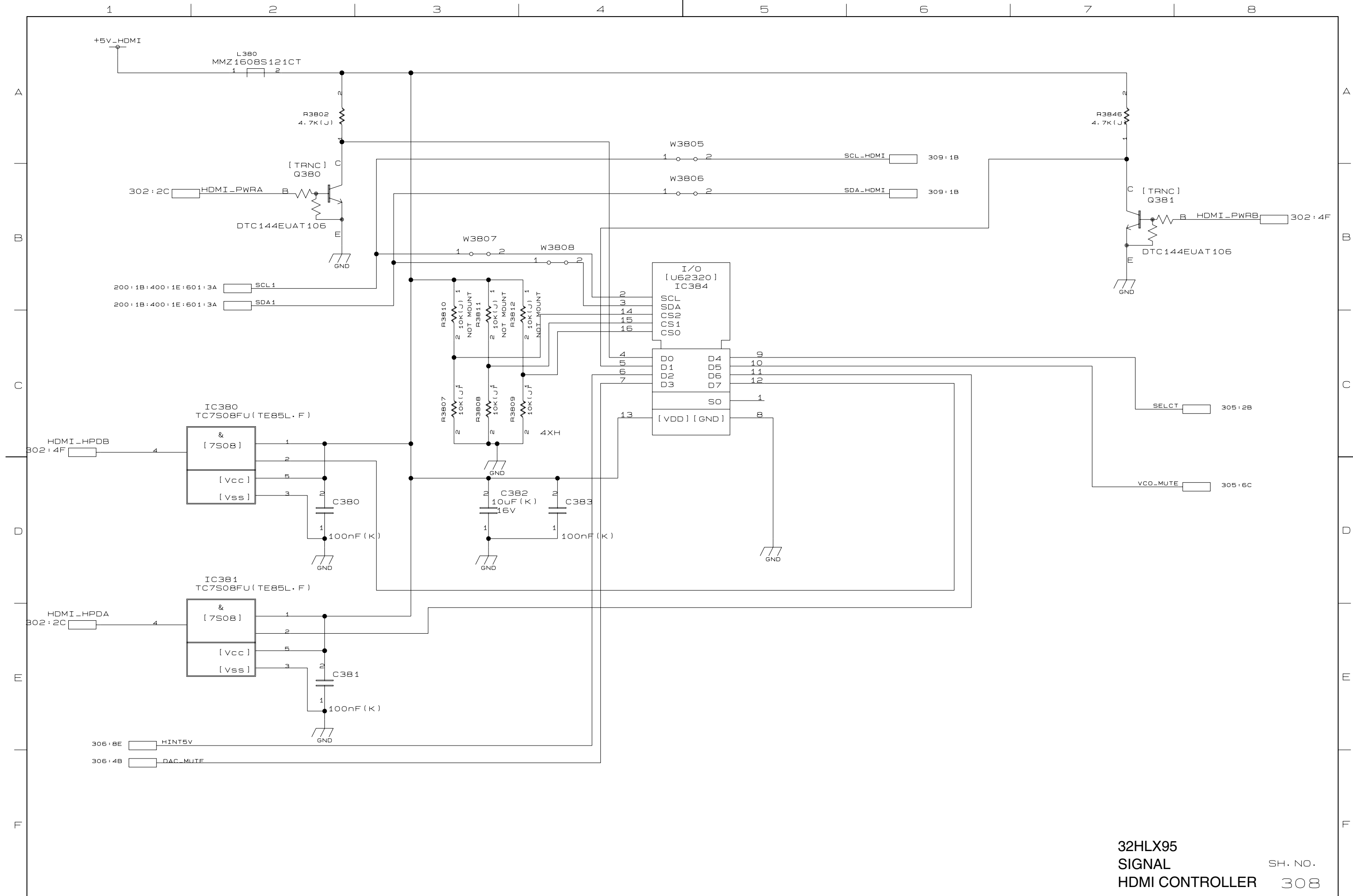


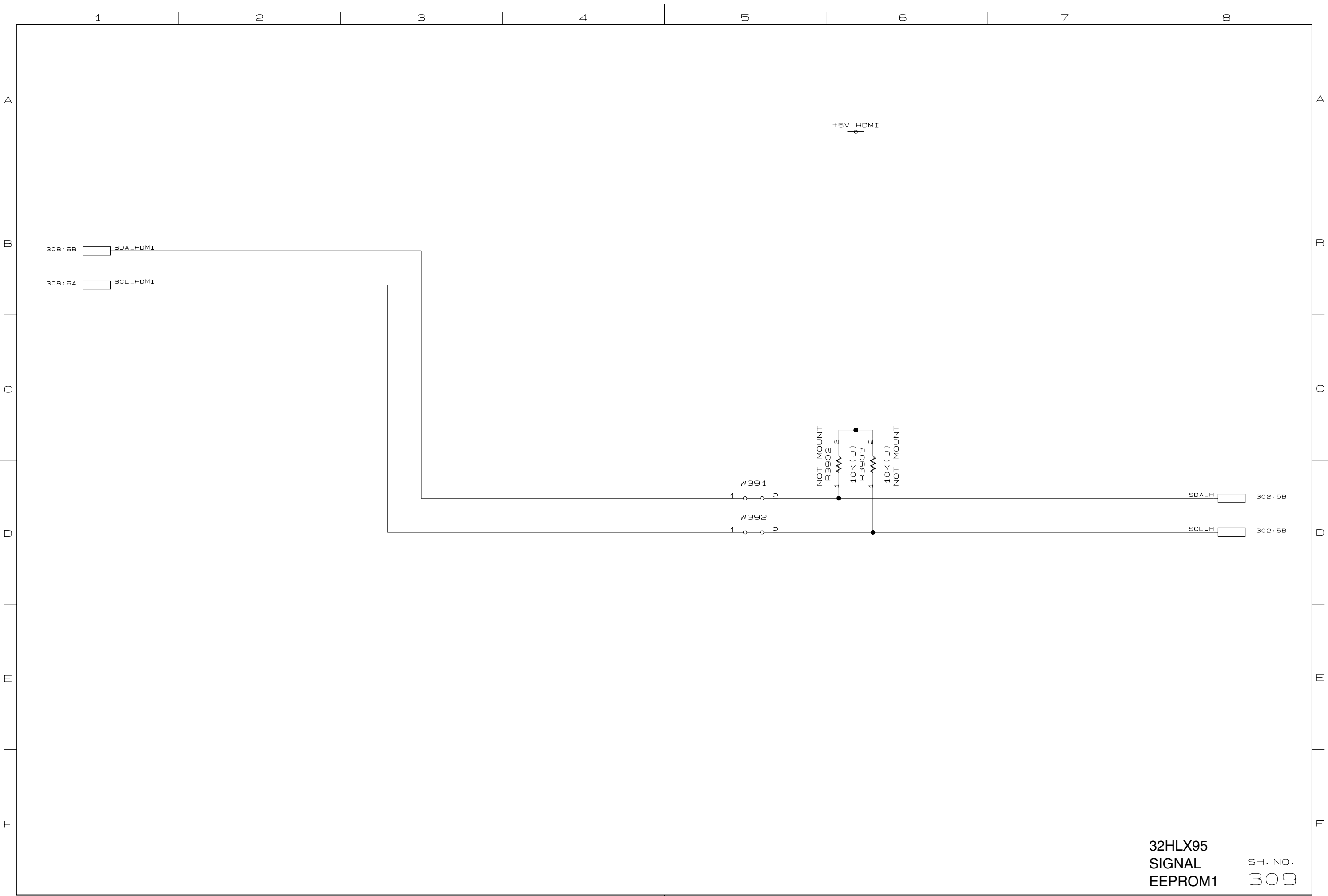


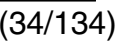


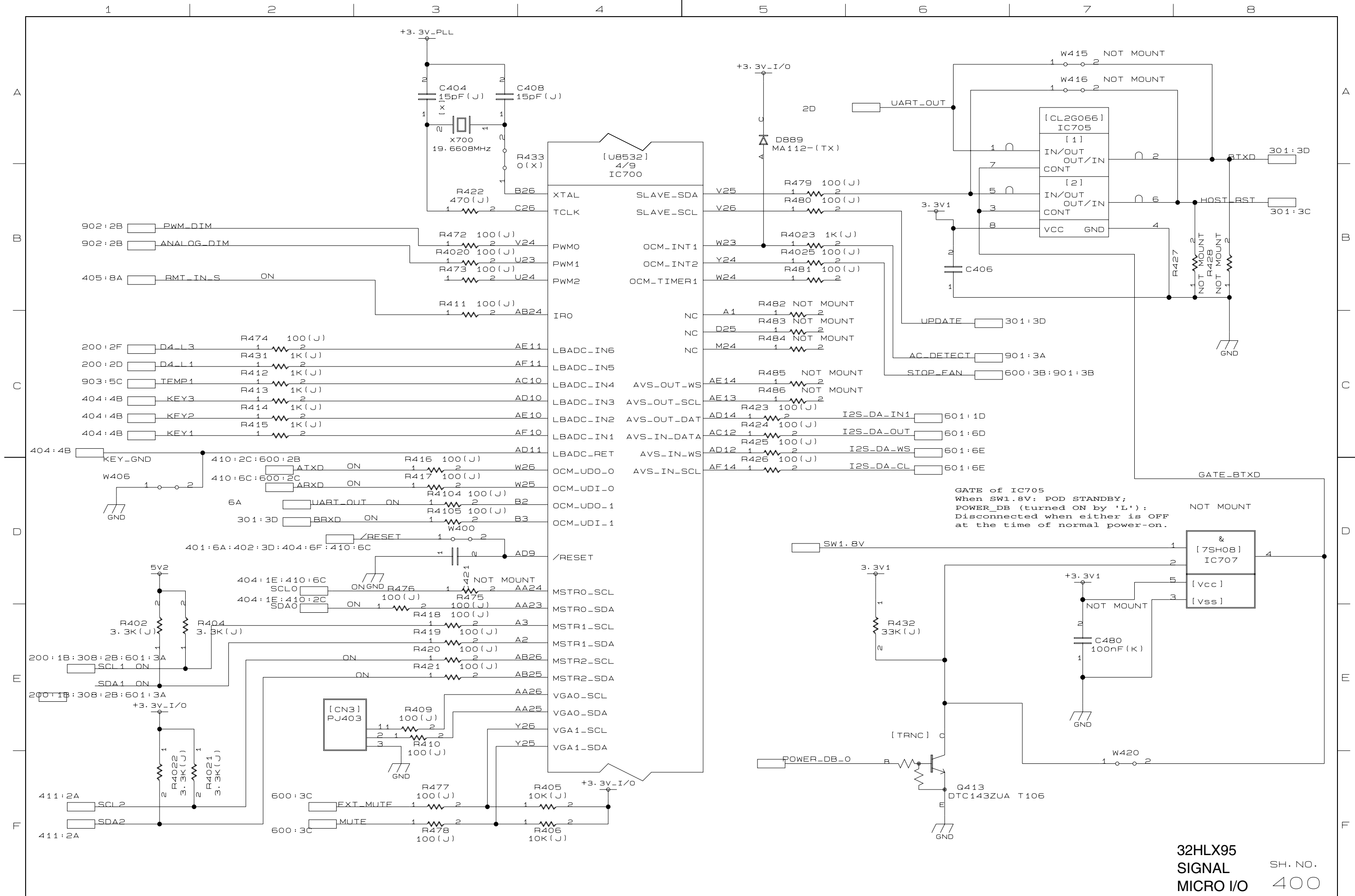
32HLX95
SIGNAL
HDMI AUDIO OUT

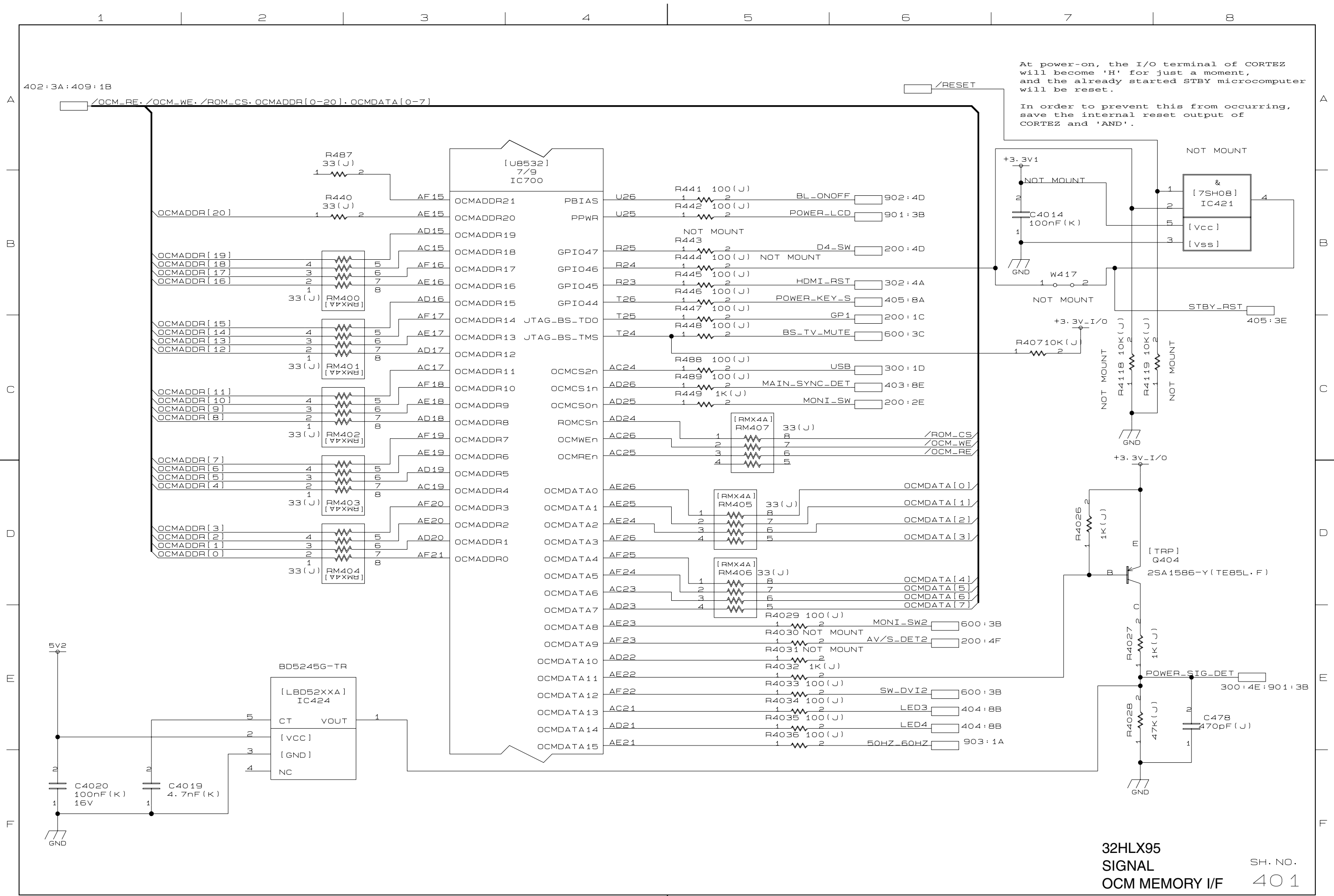
SH. NO.
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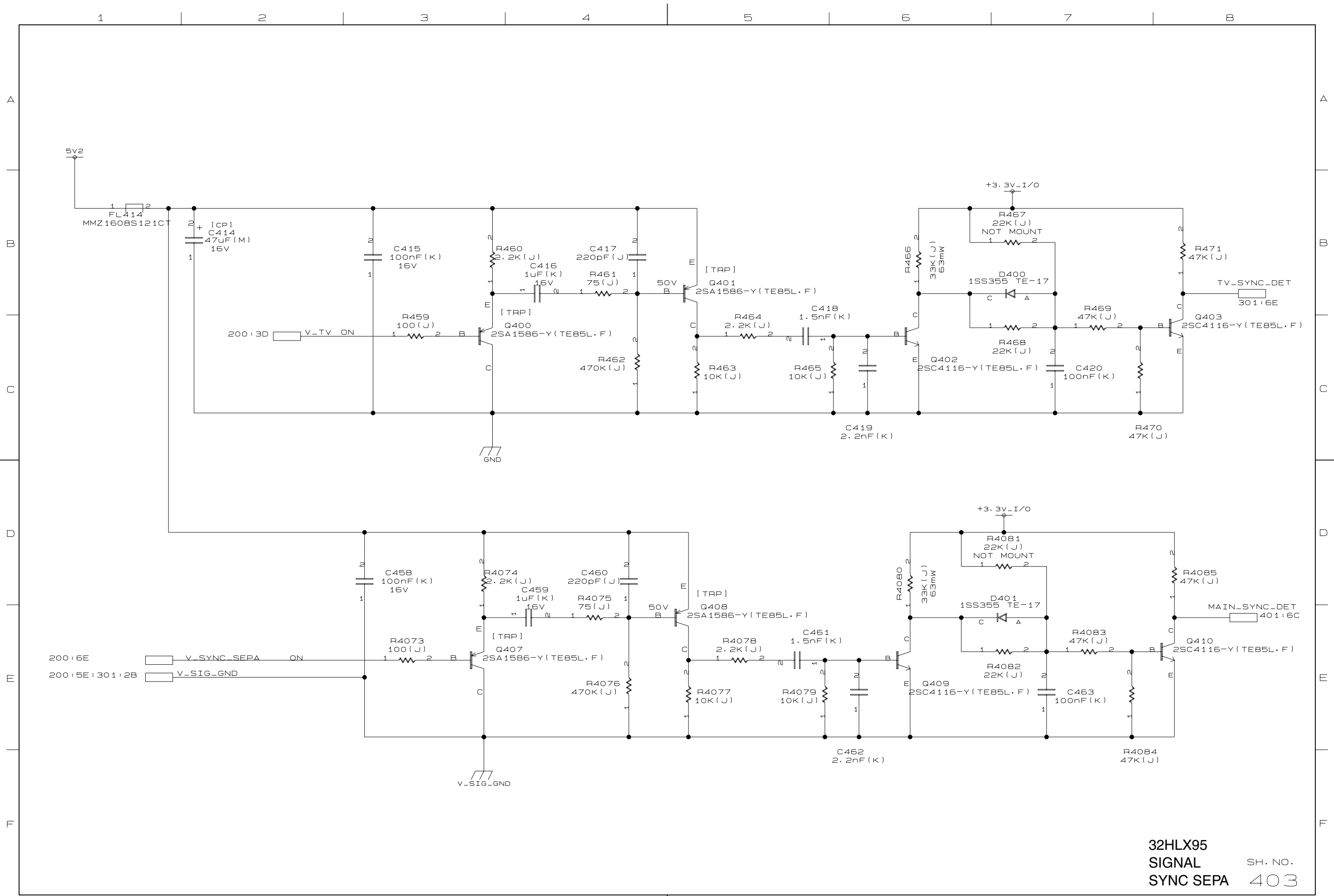






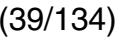


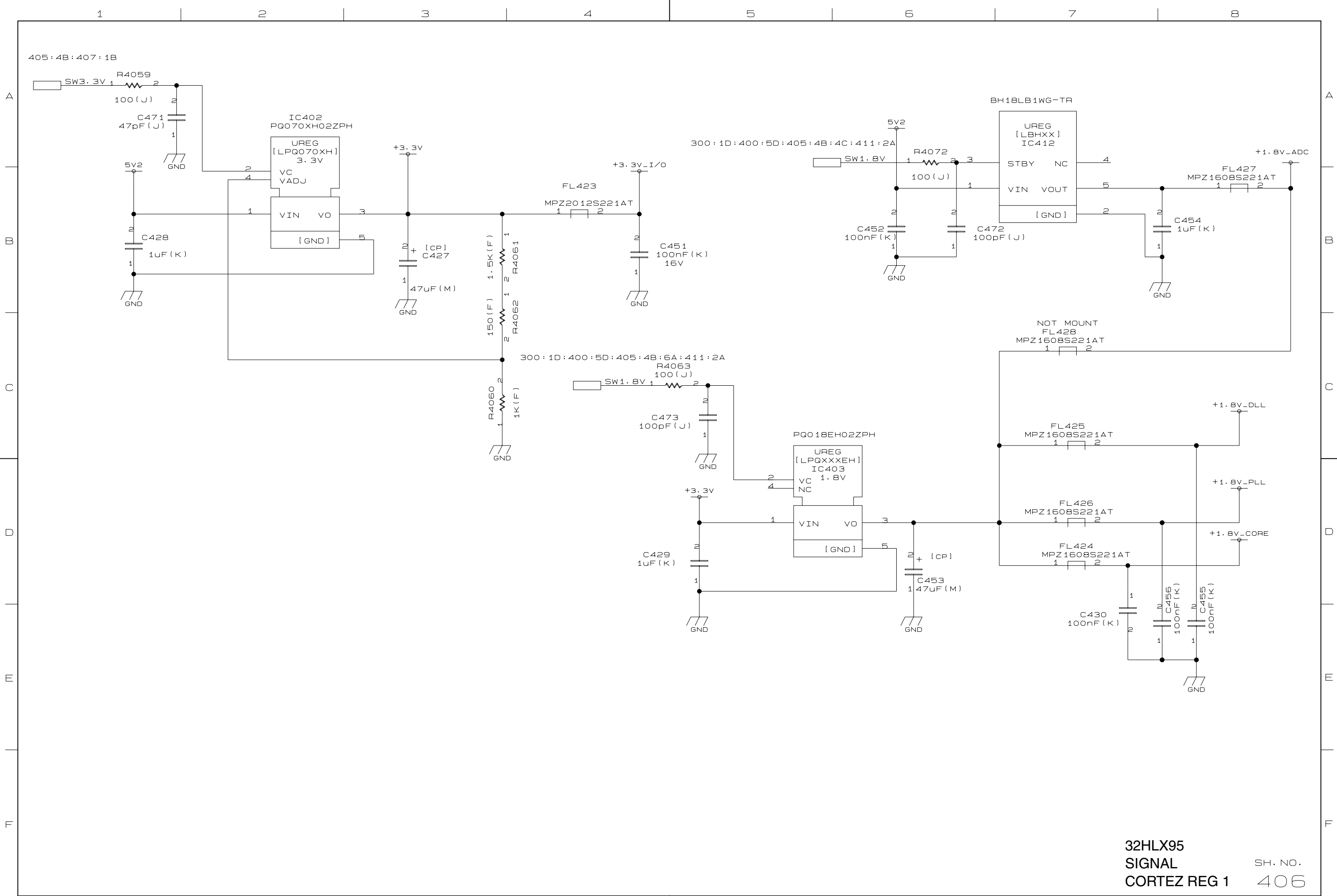


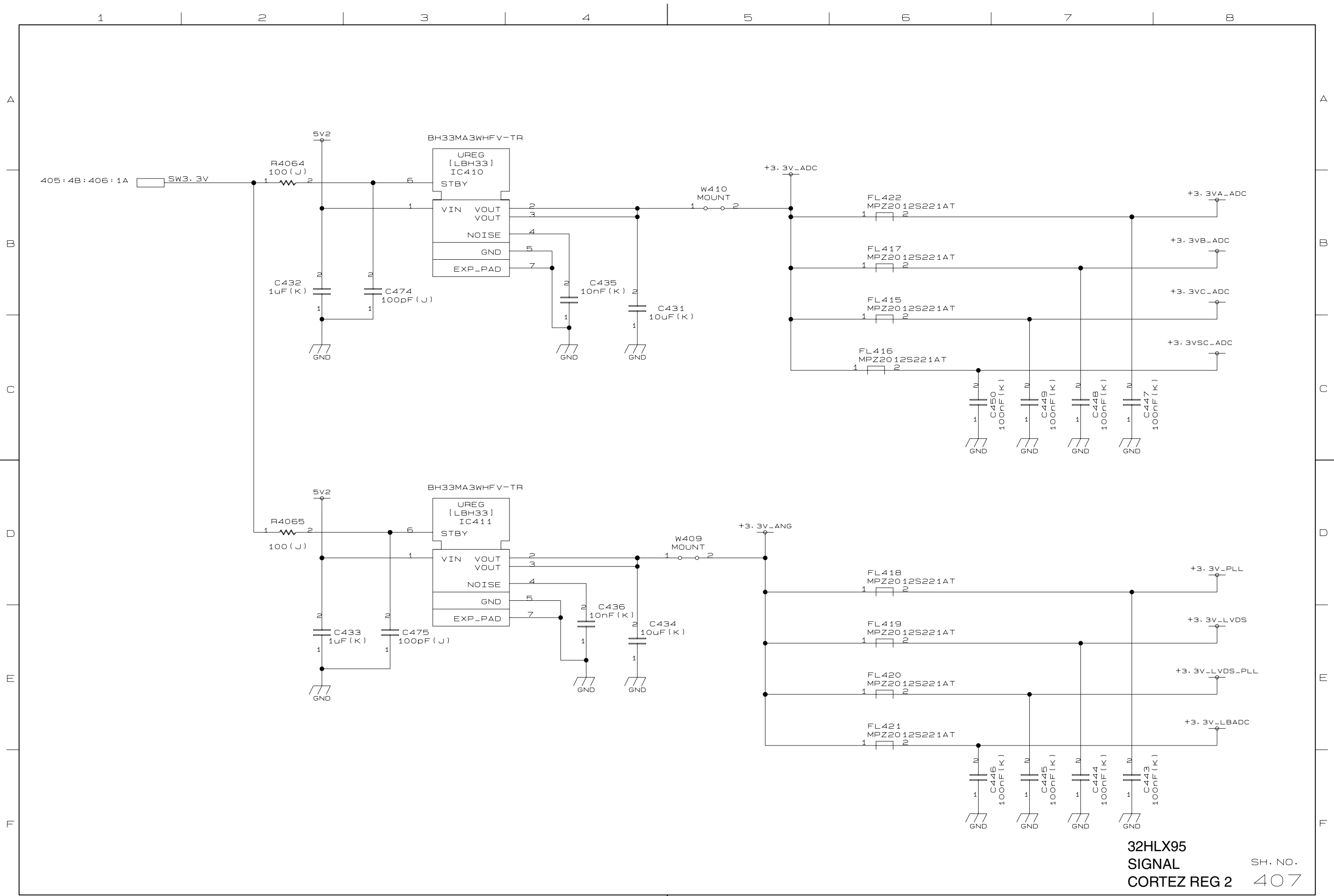


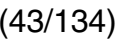
32HLX95
SIGNAL
SYNC SEPA

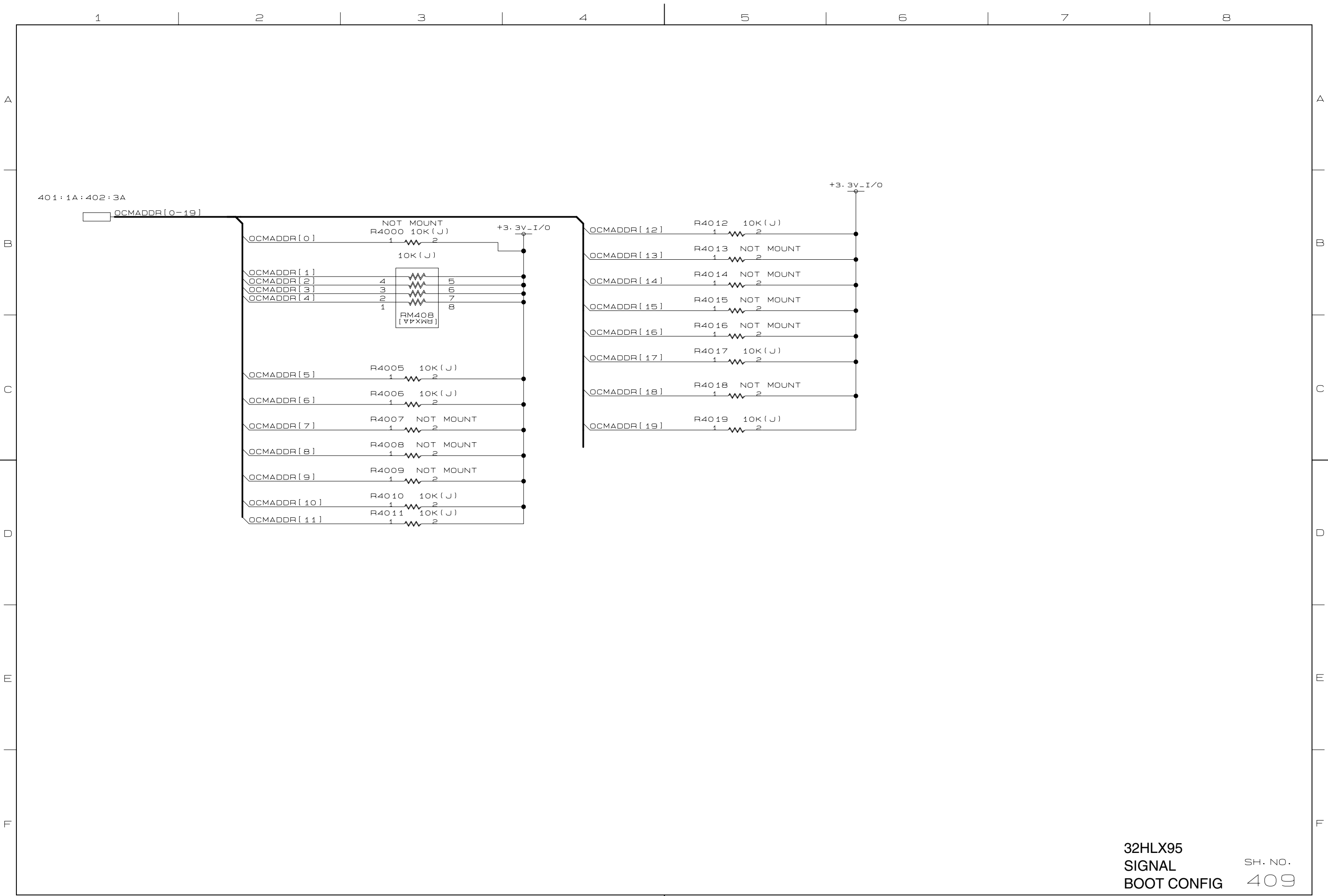
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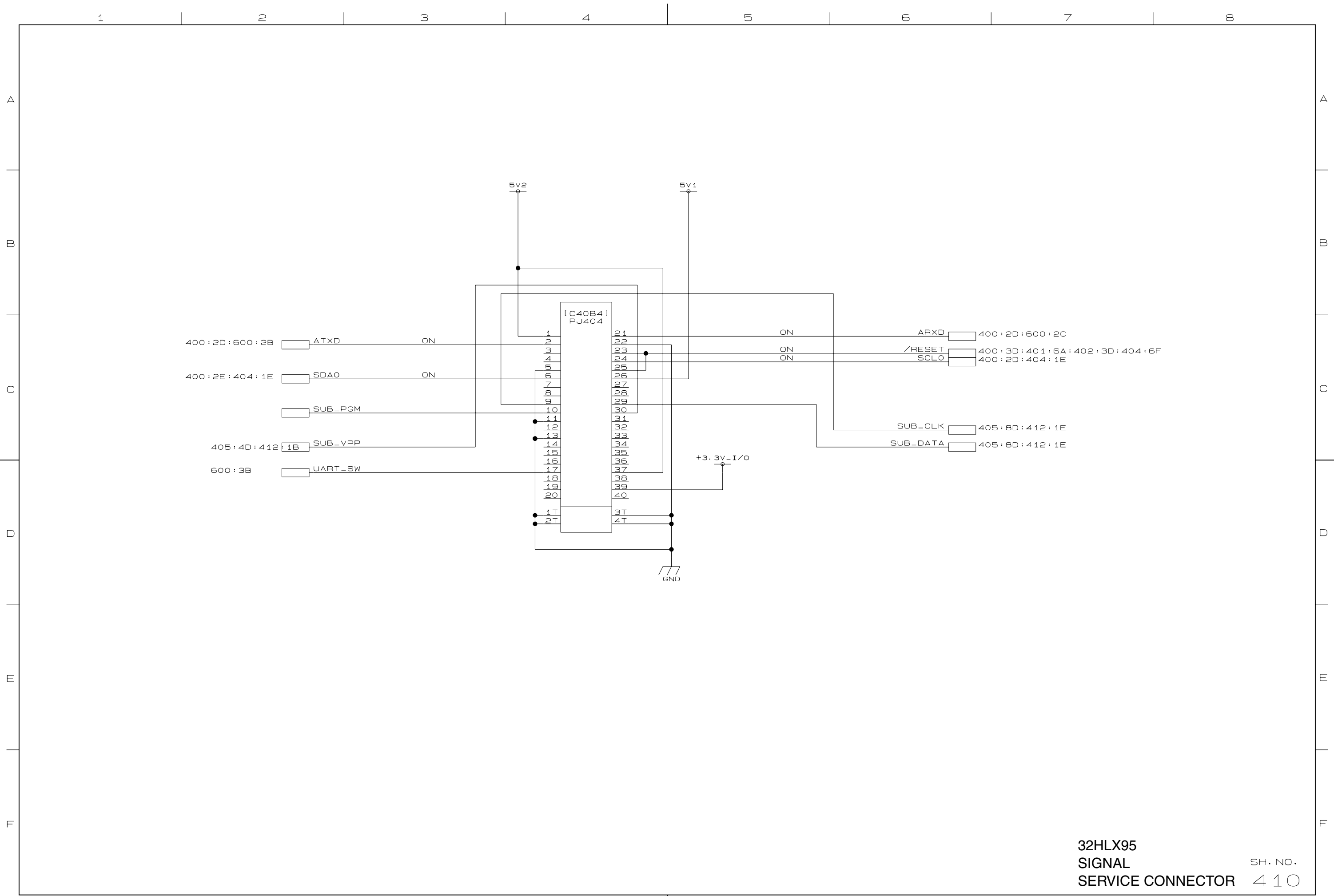


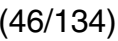


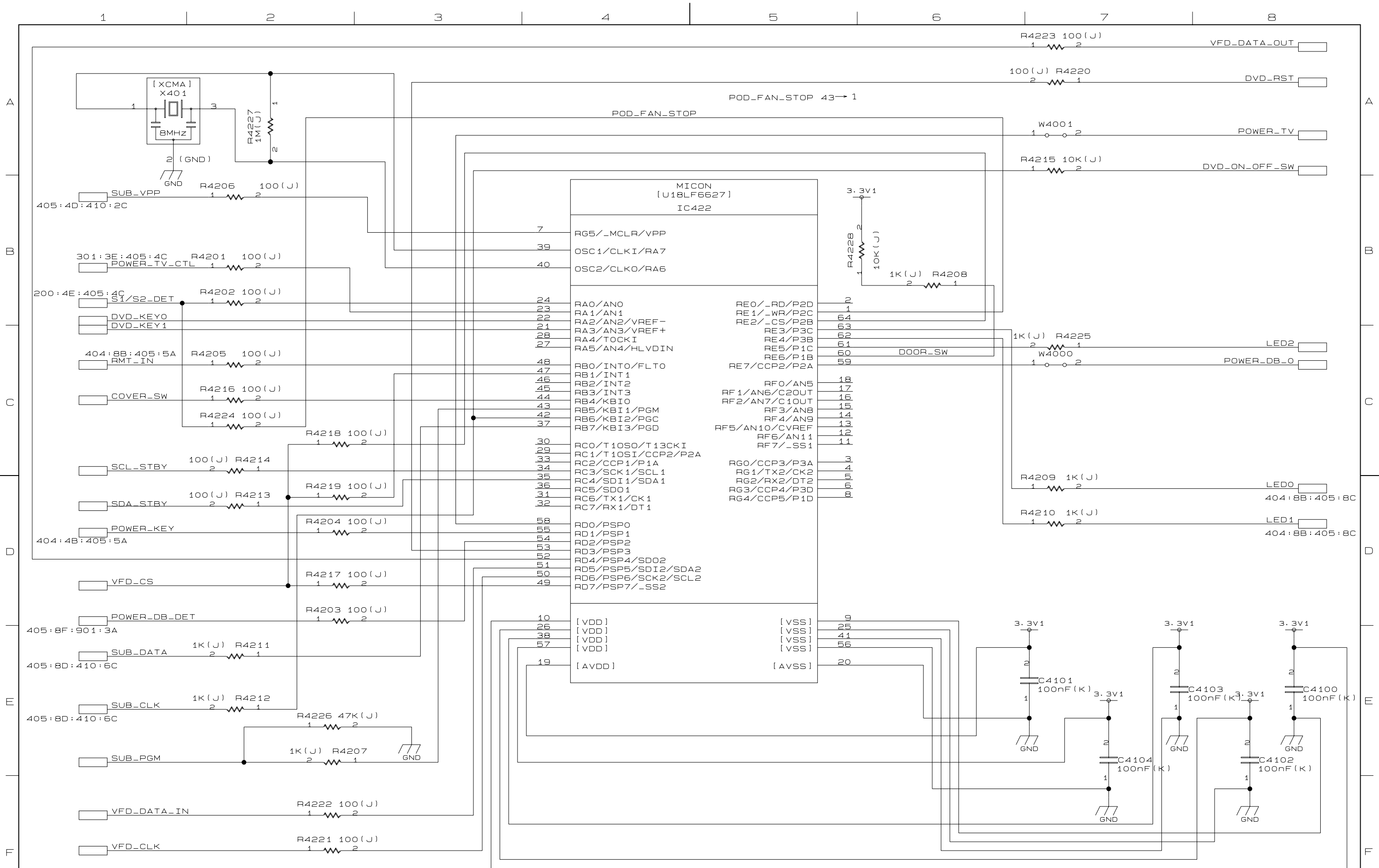






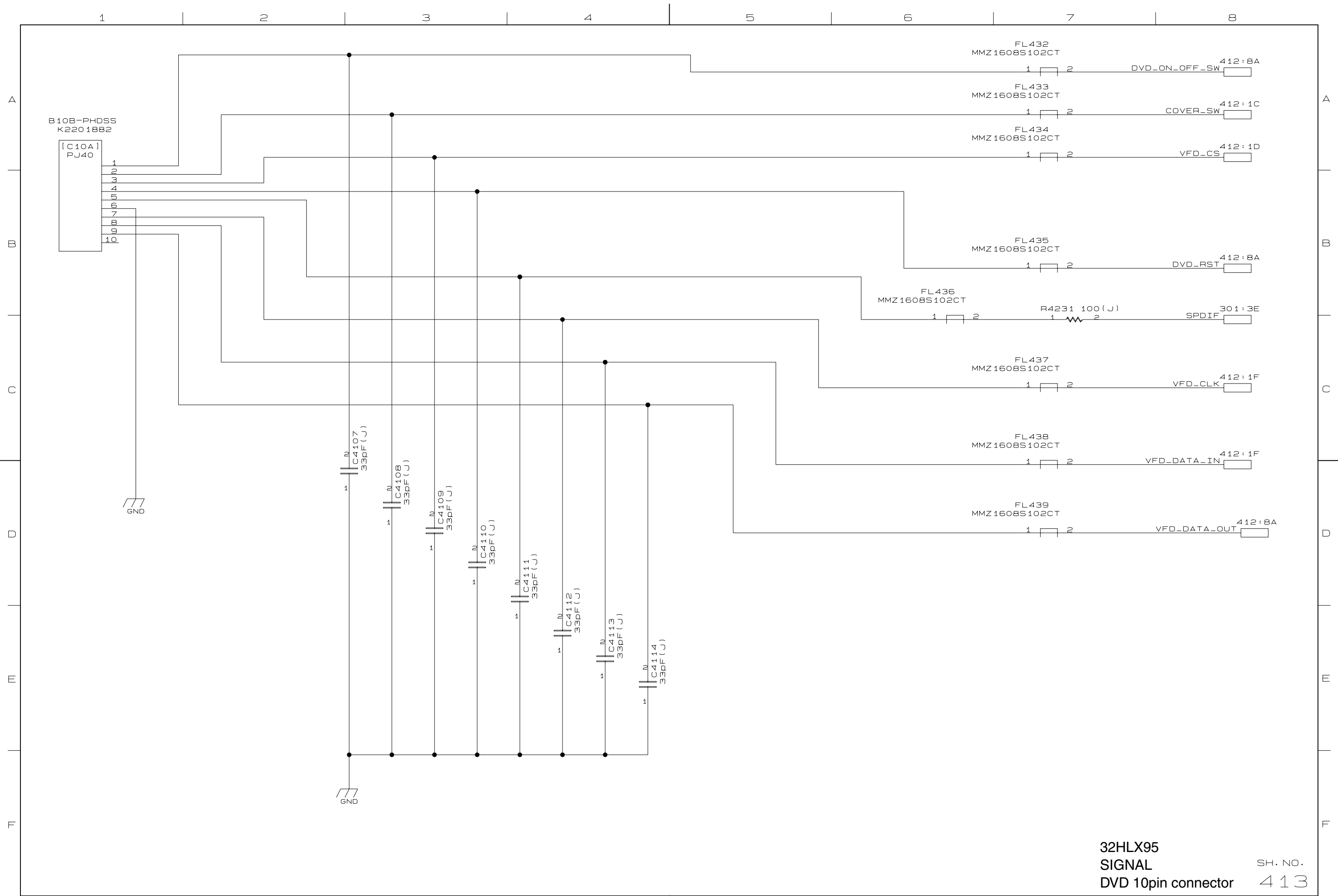


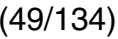




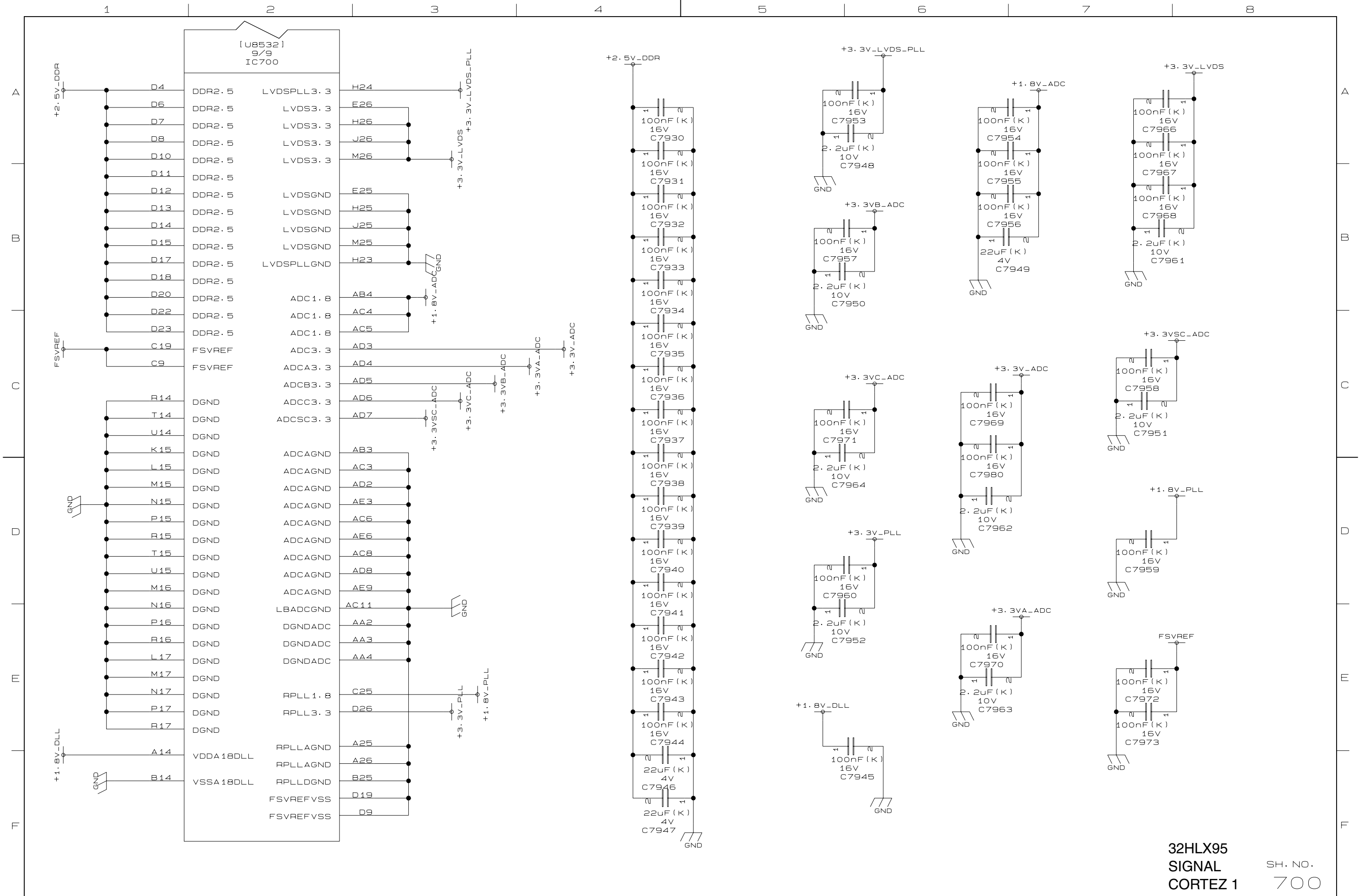
32HLX95
SIGNAL
STBY MICRO for DVD internal

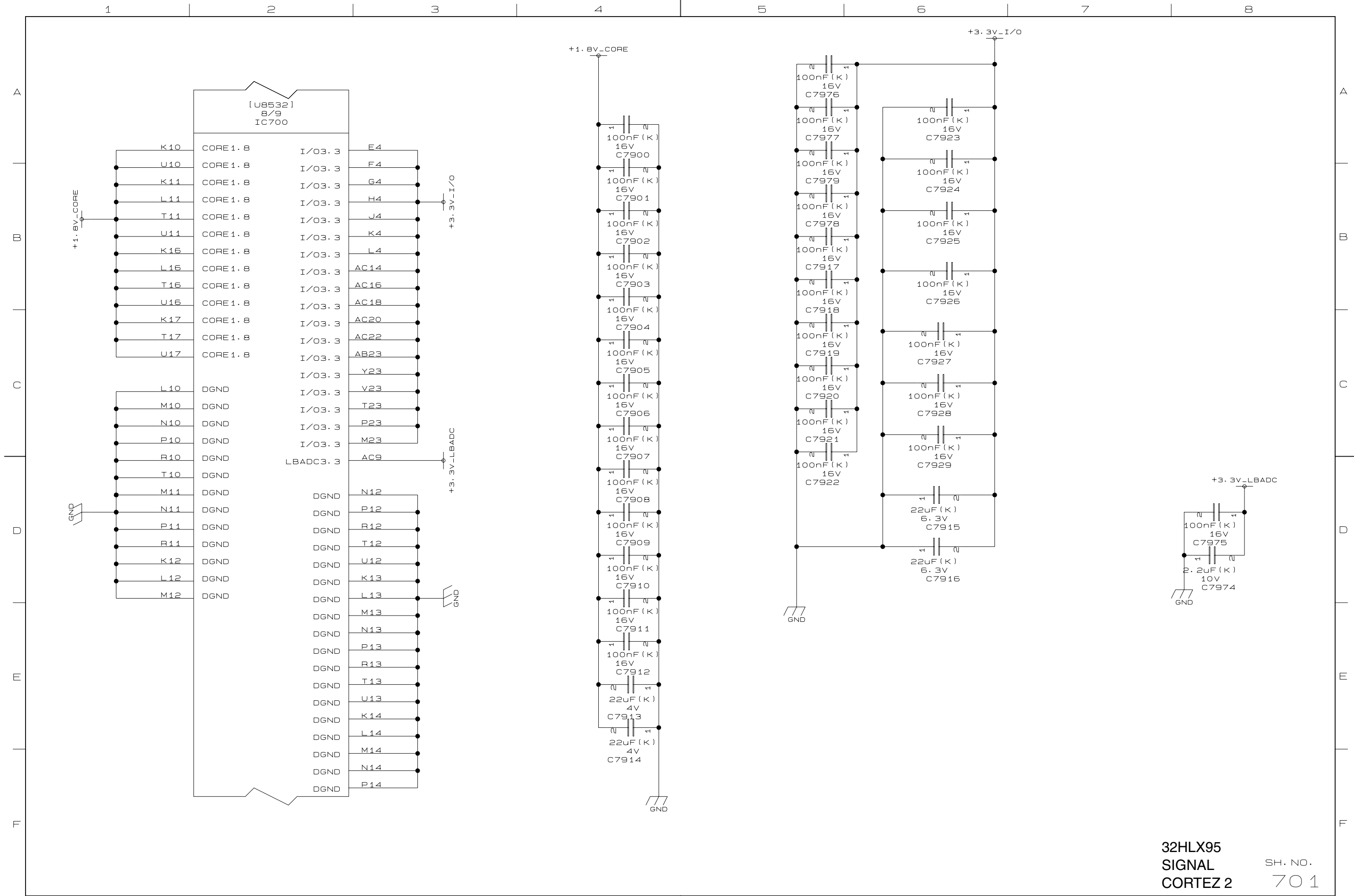
SH. NO.
412

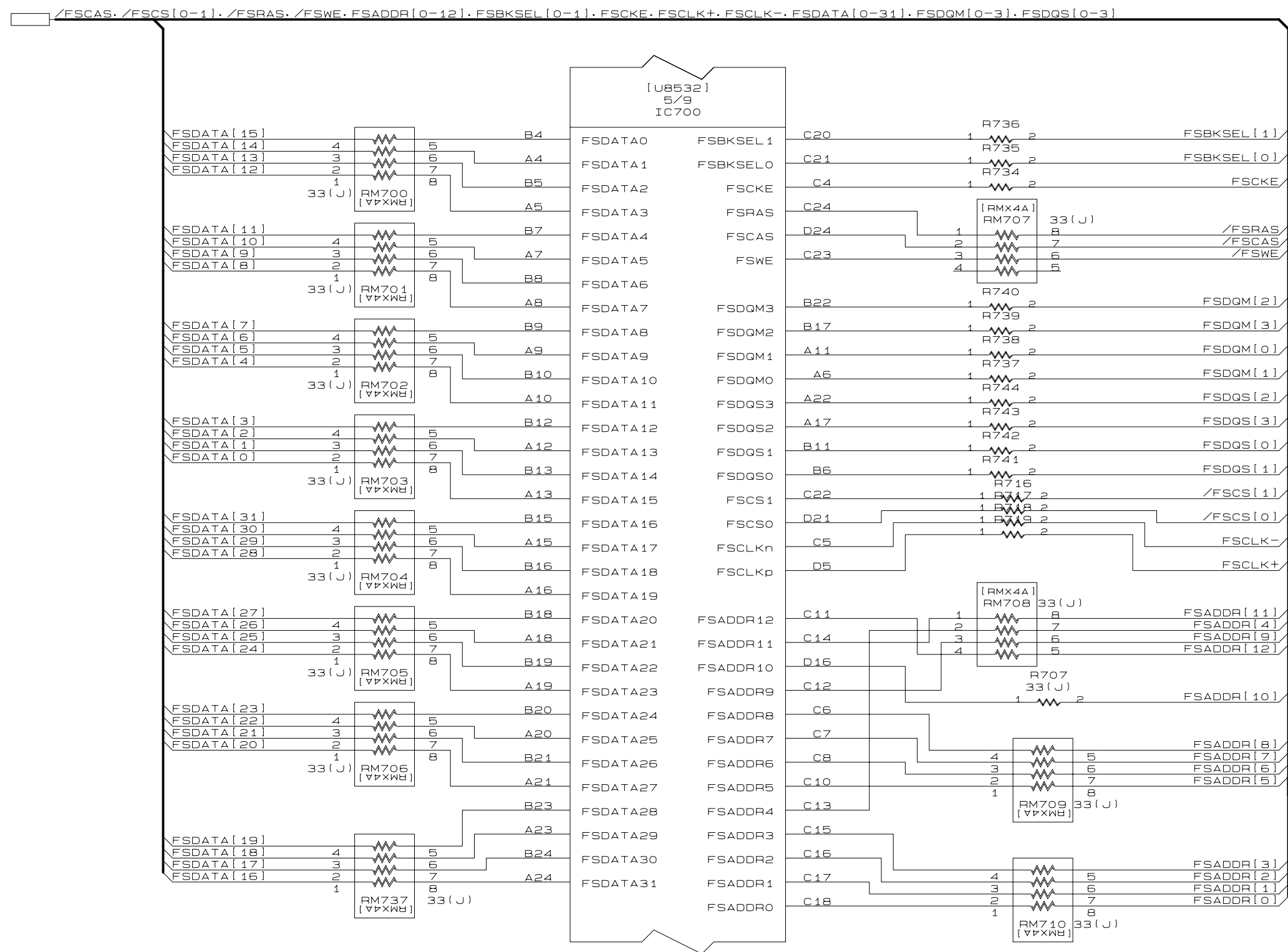


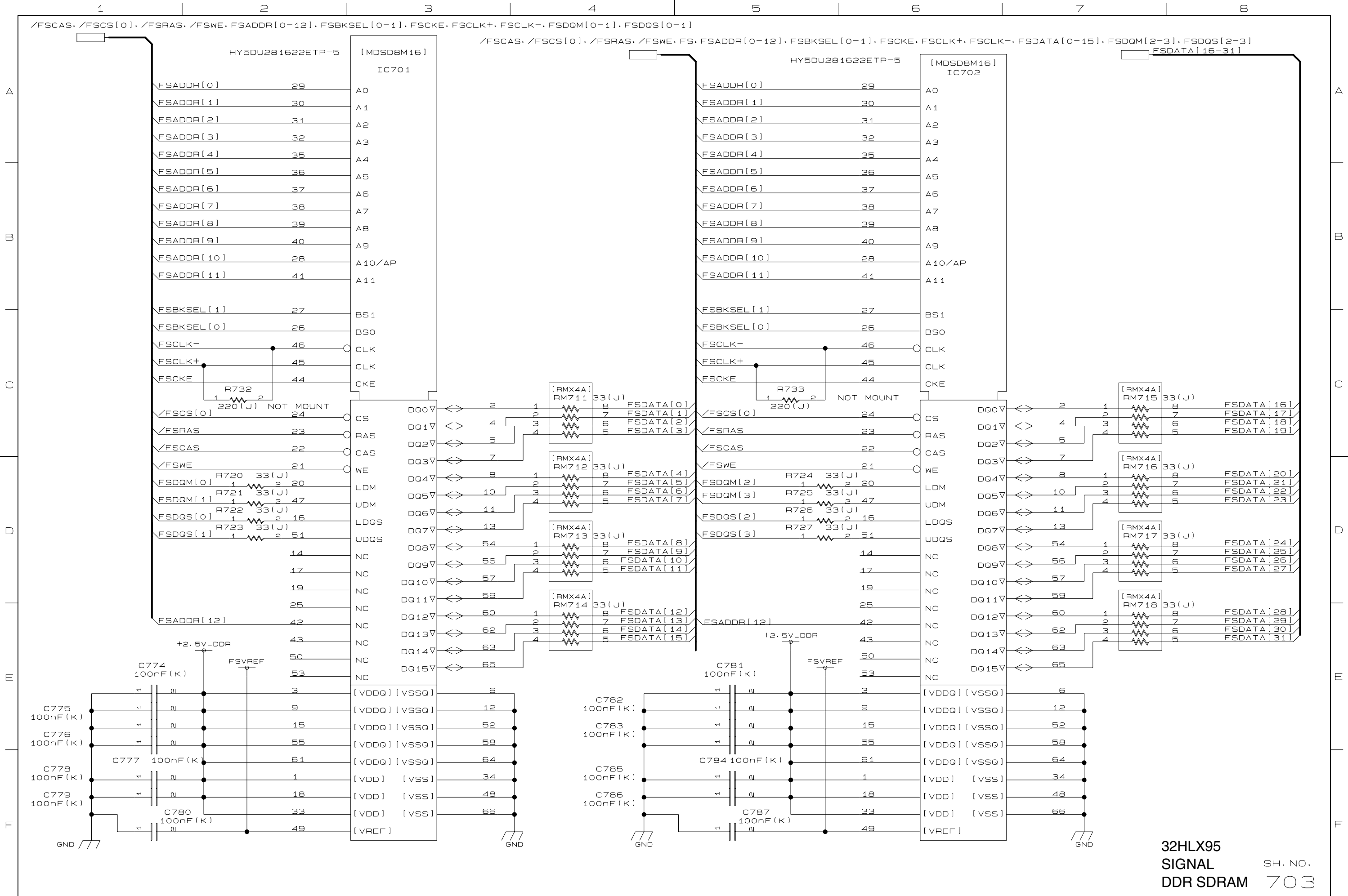


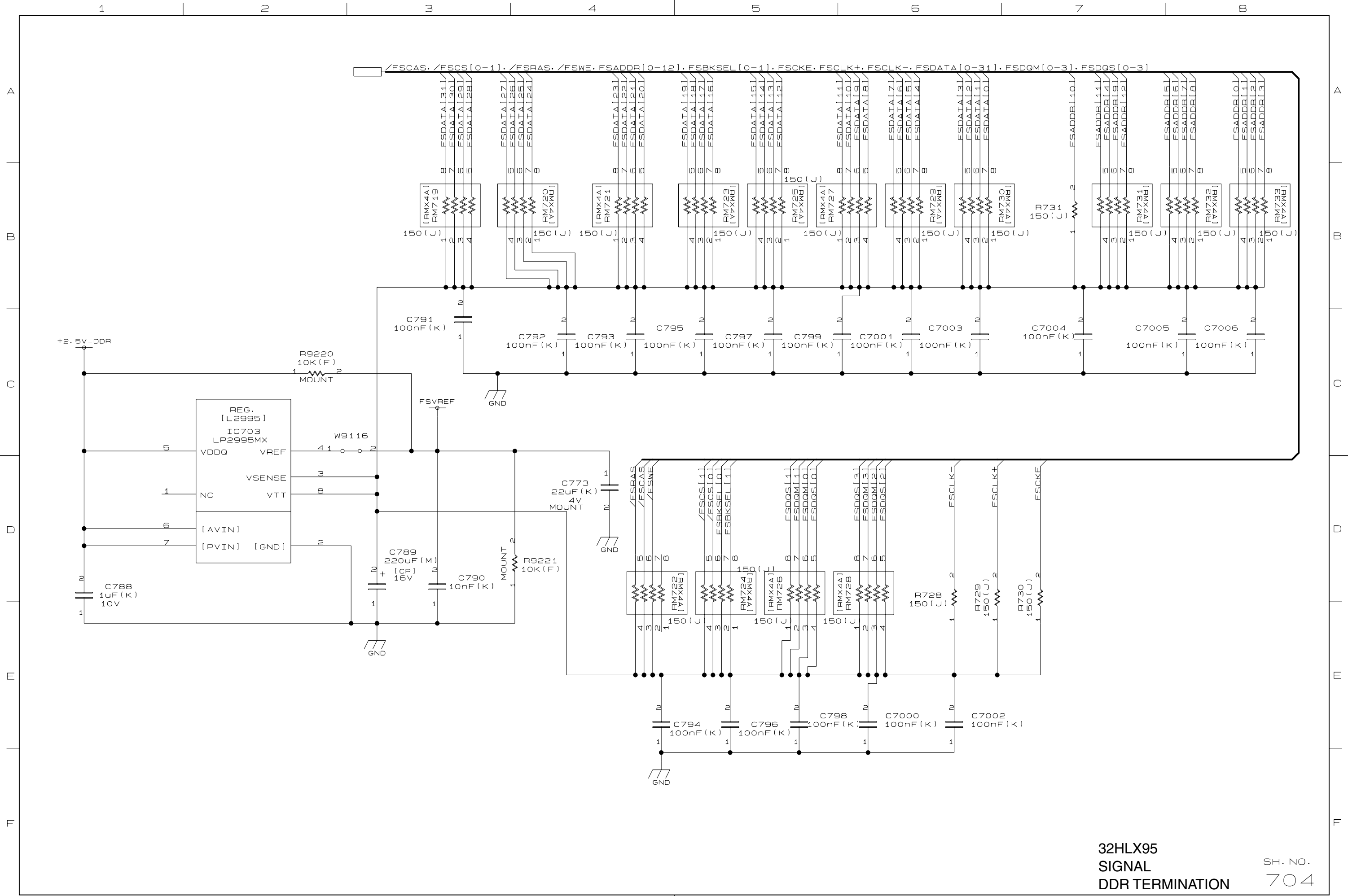












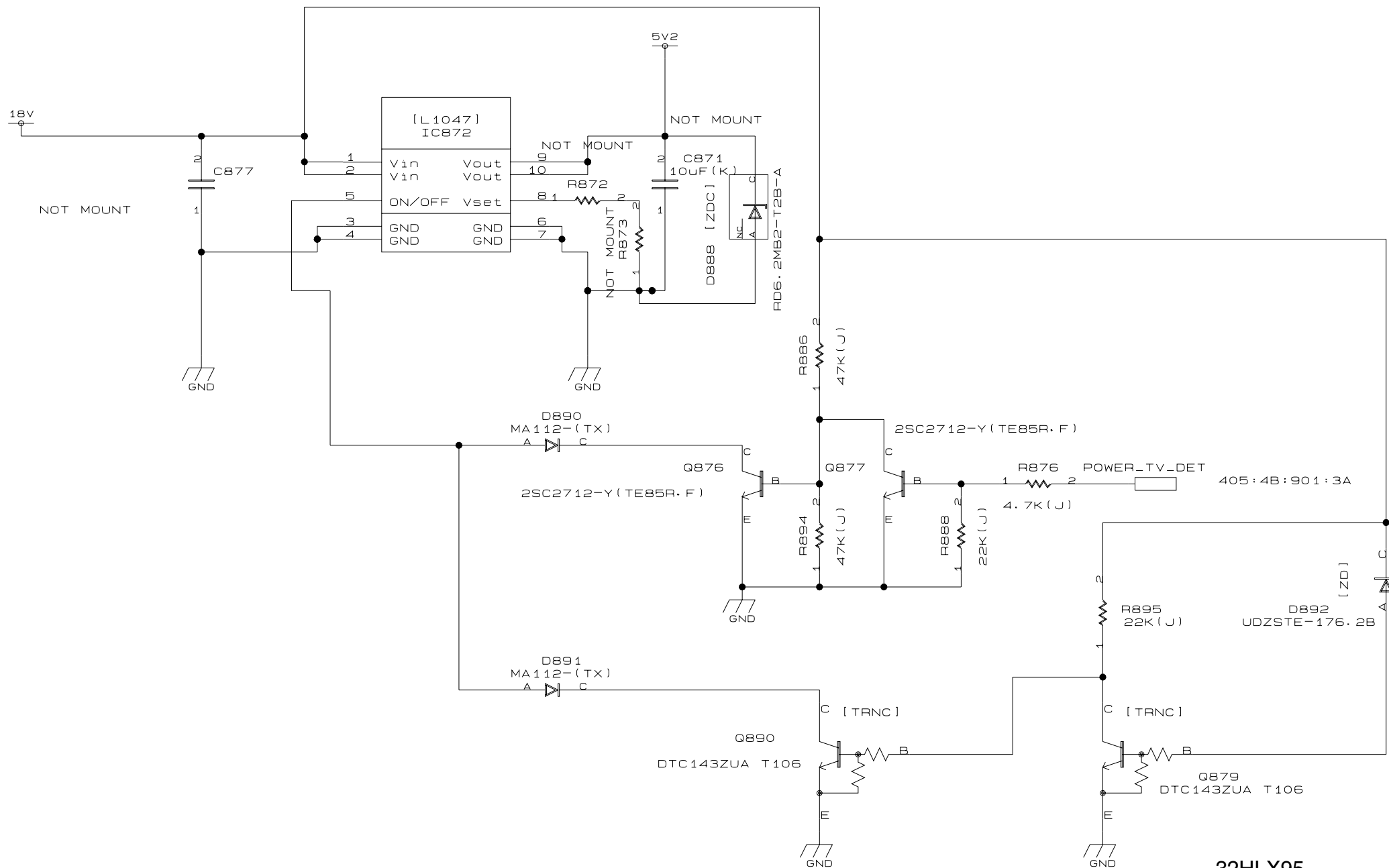
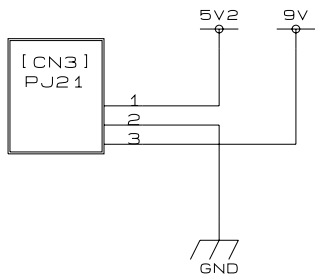
32HLX95
SIGNAL
DDR TERMINATION

SH. NO.
704

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32HLX95
SIGNAL
DCDC CONV.

SH. NO.
802

A

B

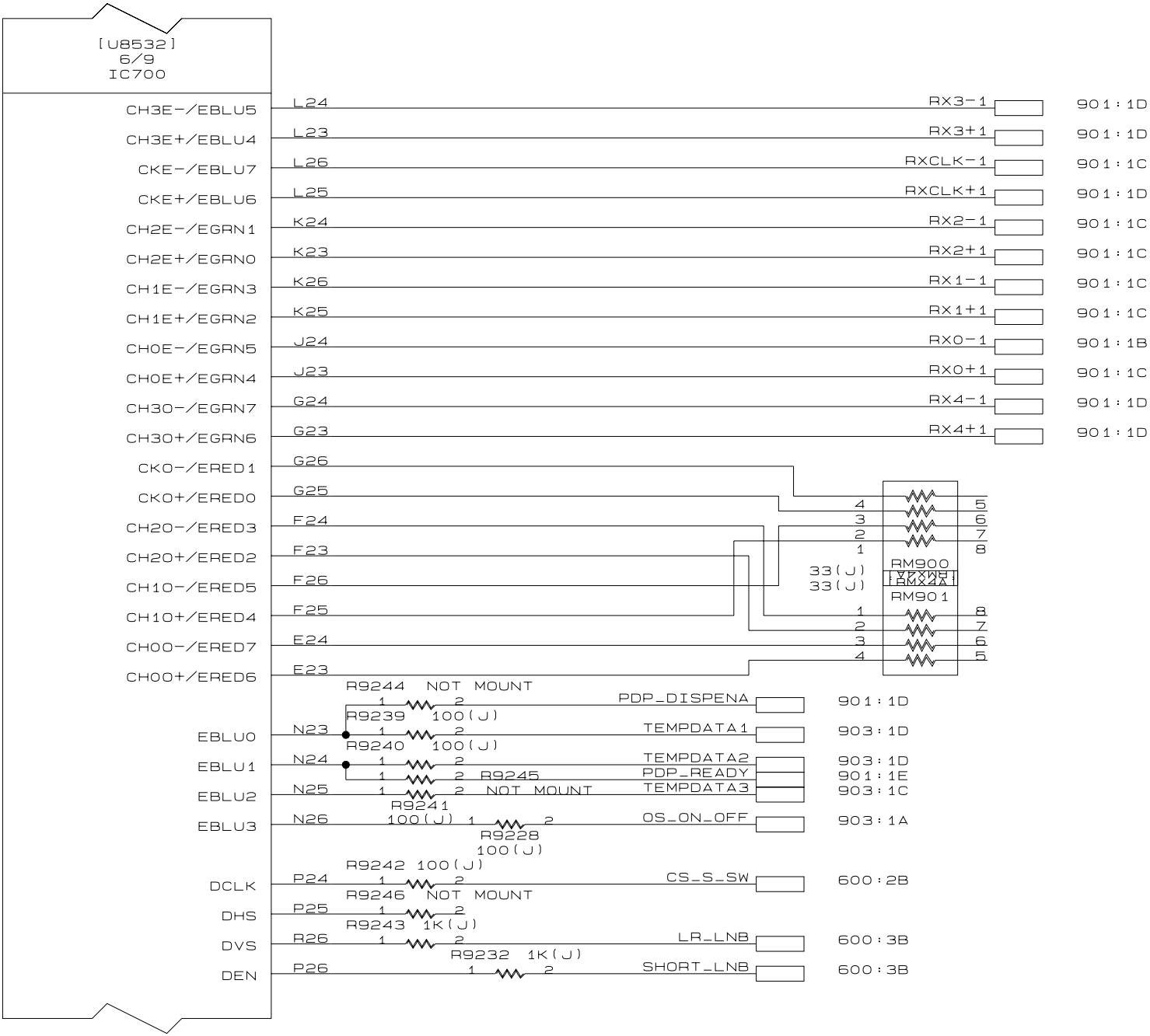
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12345678



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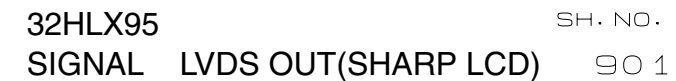
B

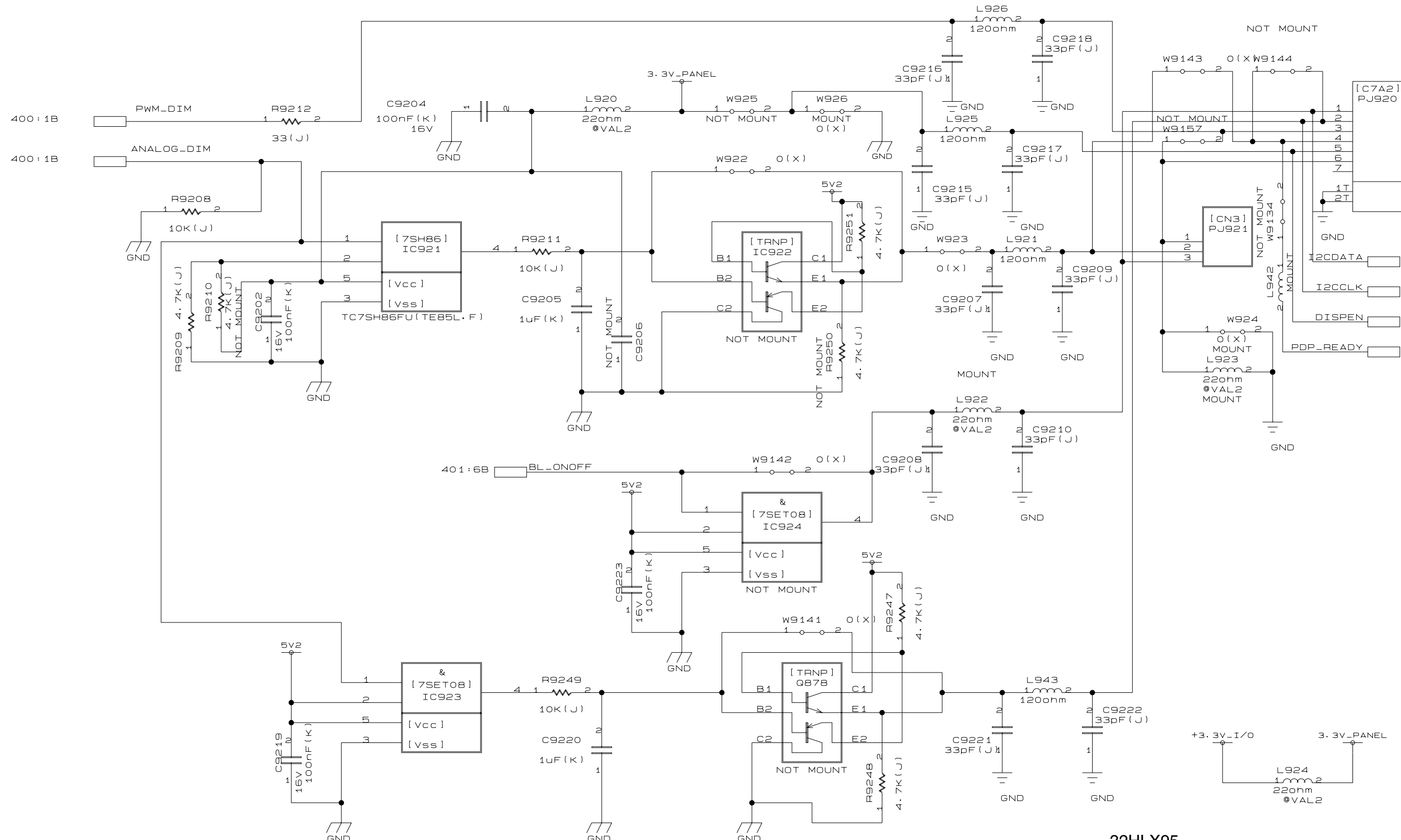
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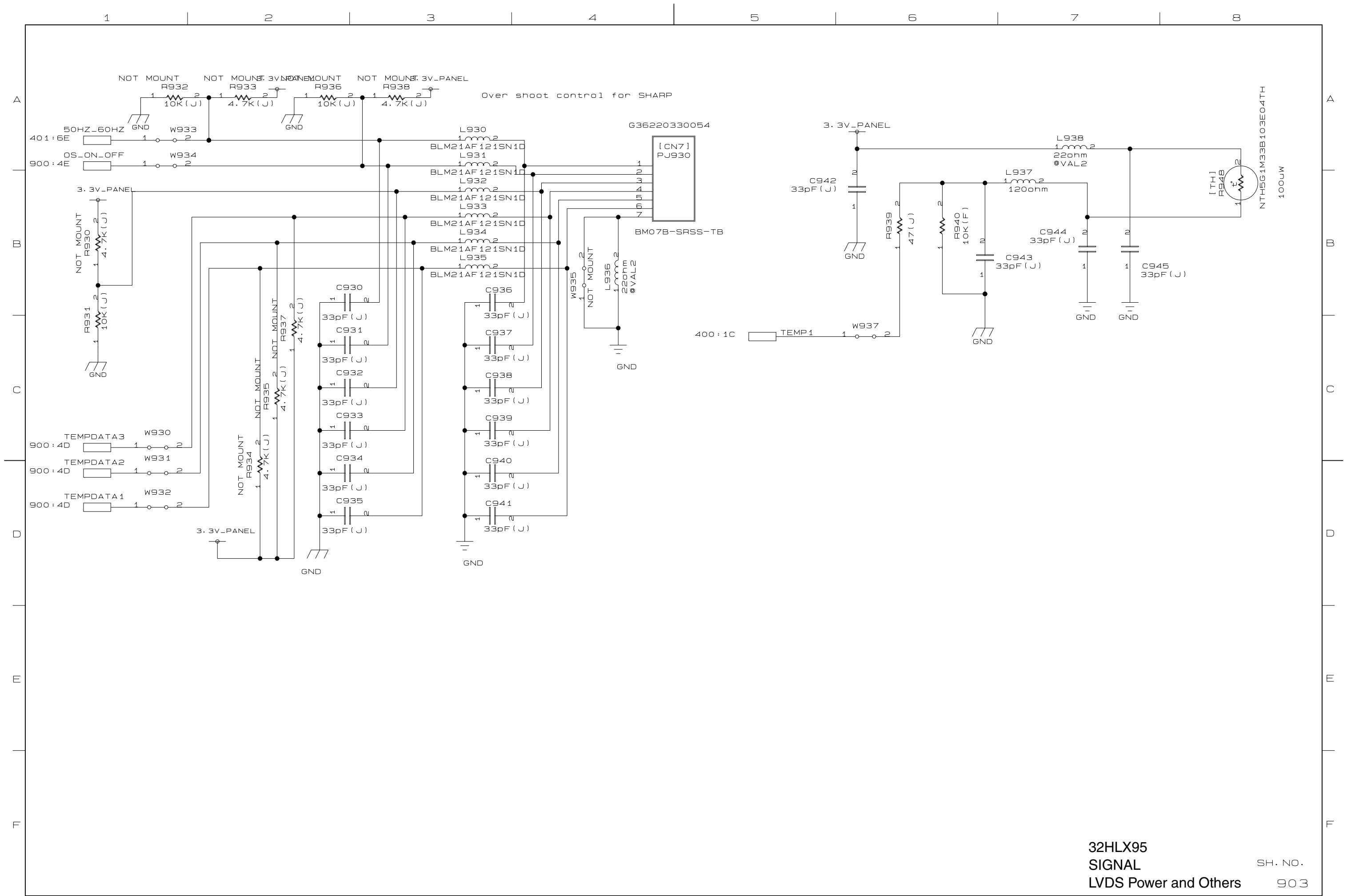
F

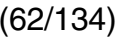


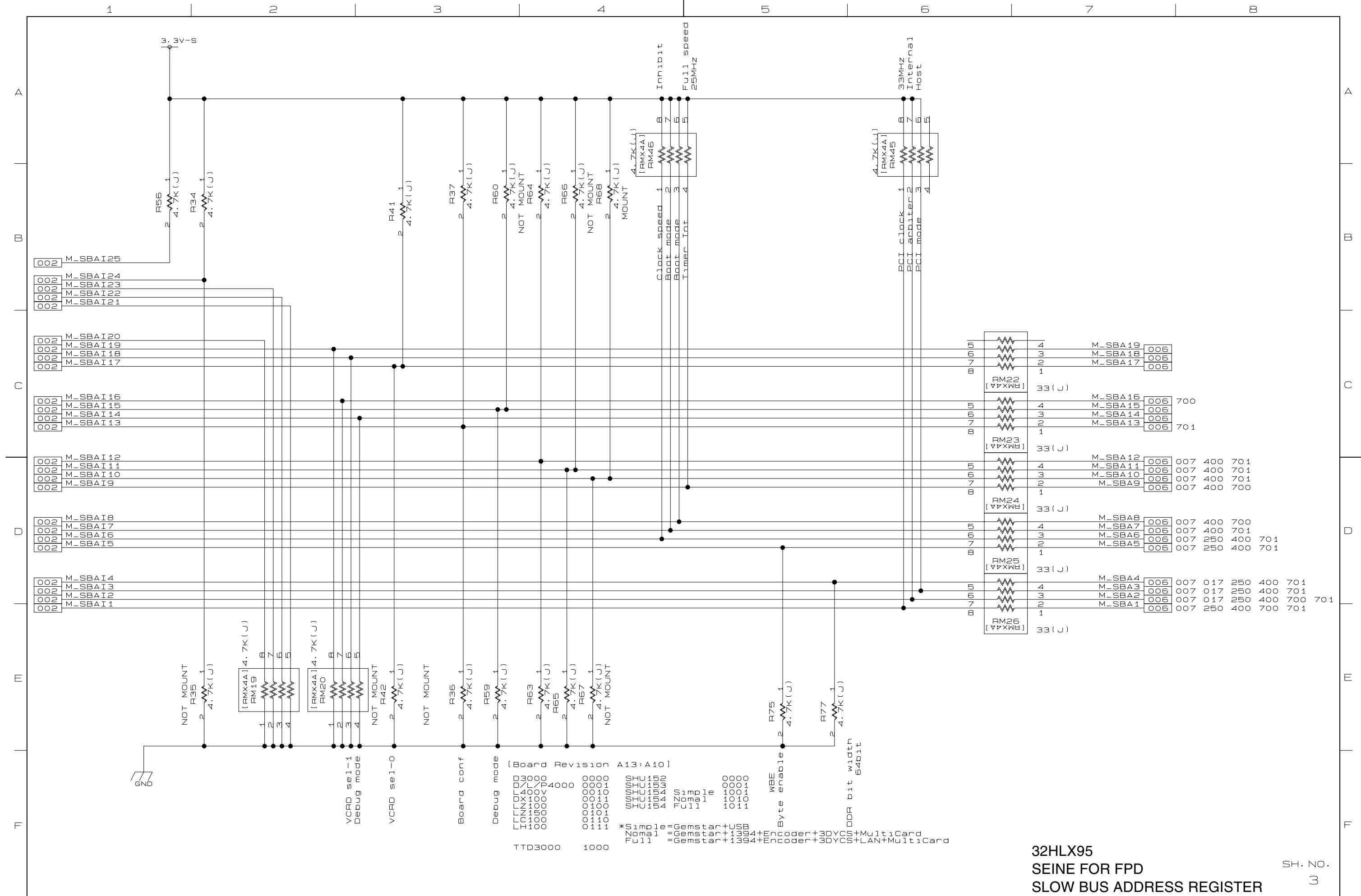


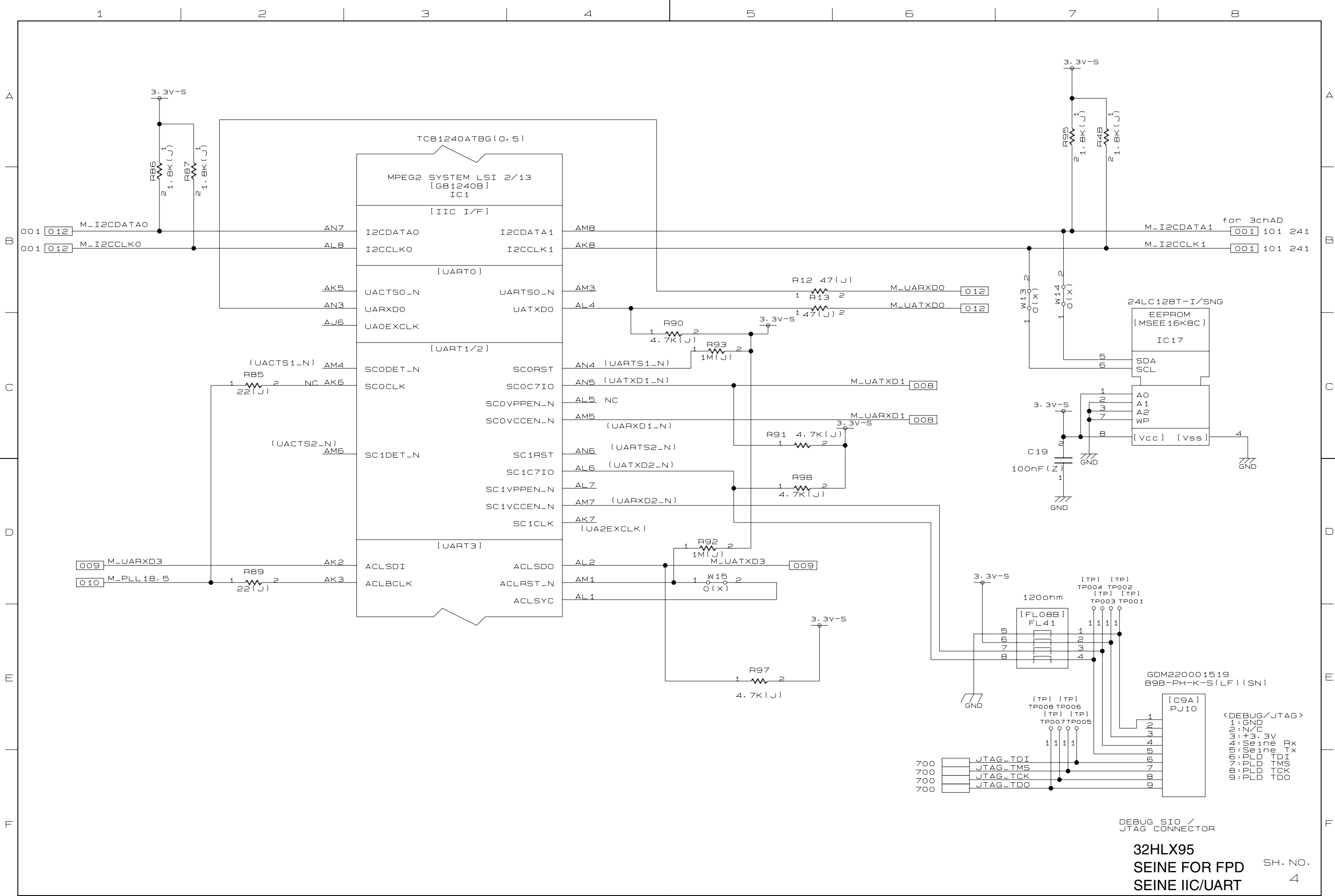
32HLX95
SIGNAL
Power Connector and Dimming

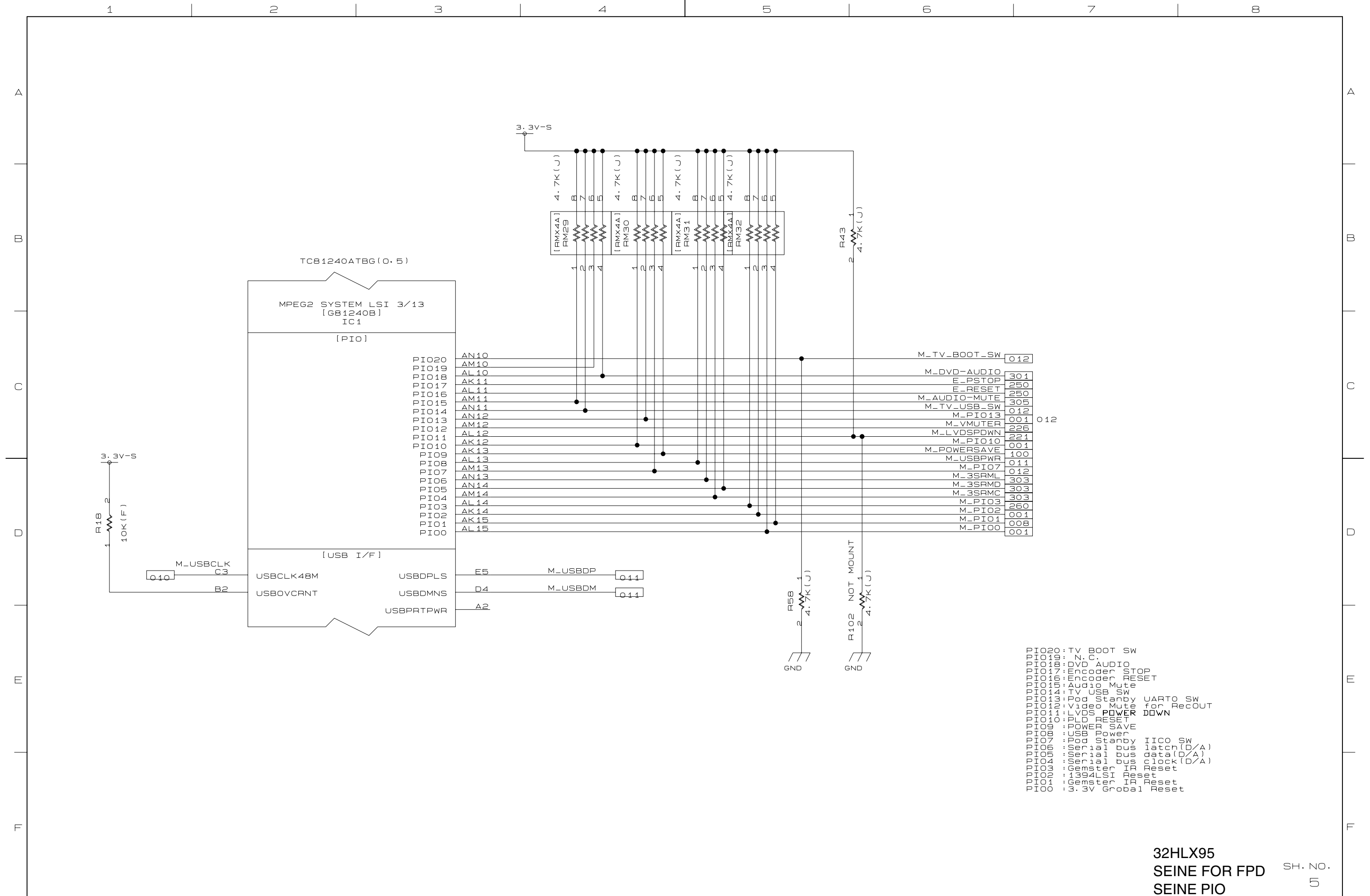
SH. NO.
902

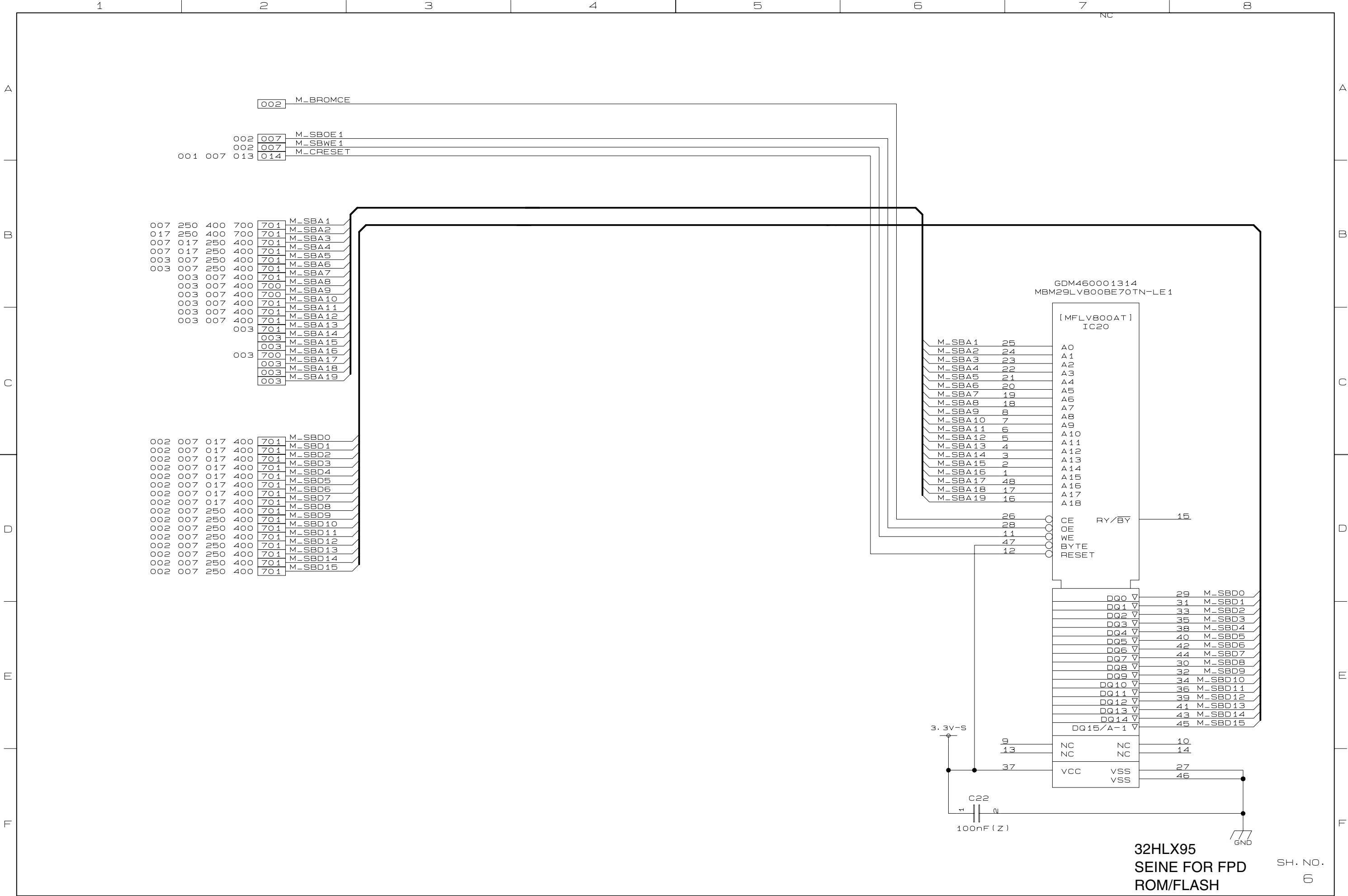


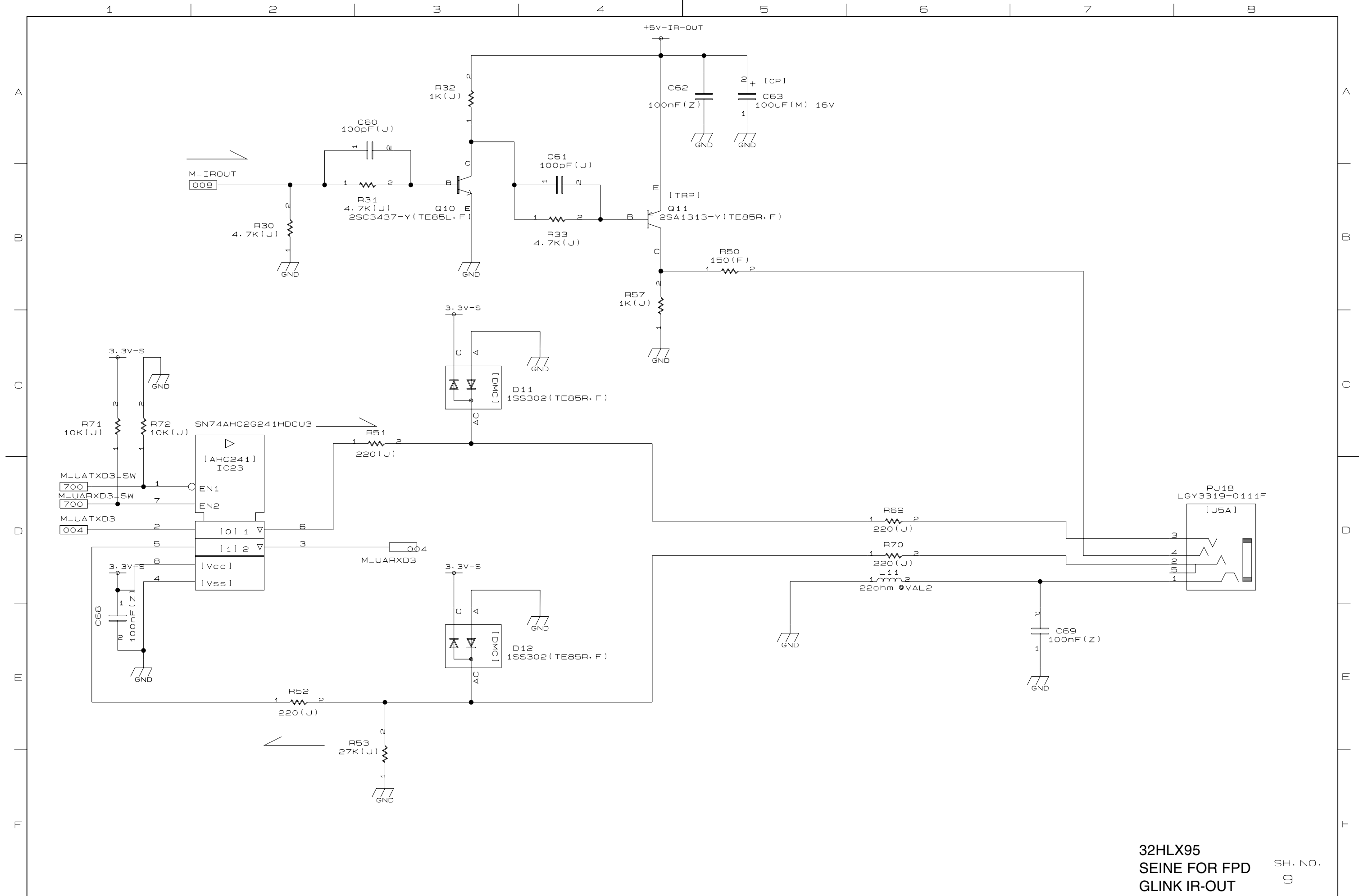


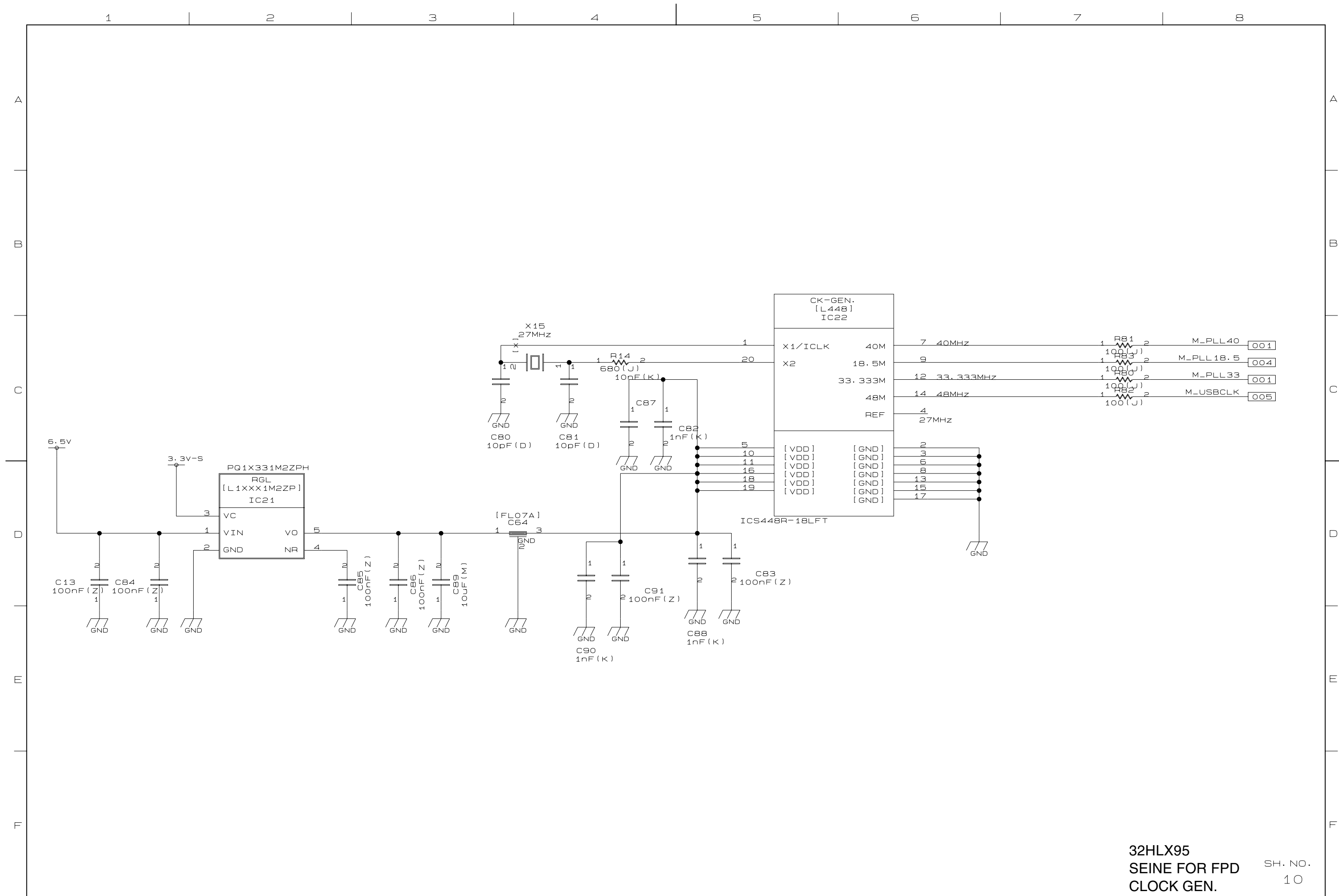












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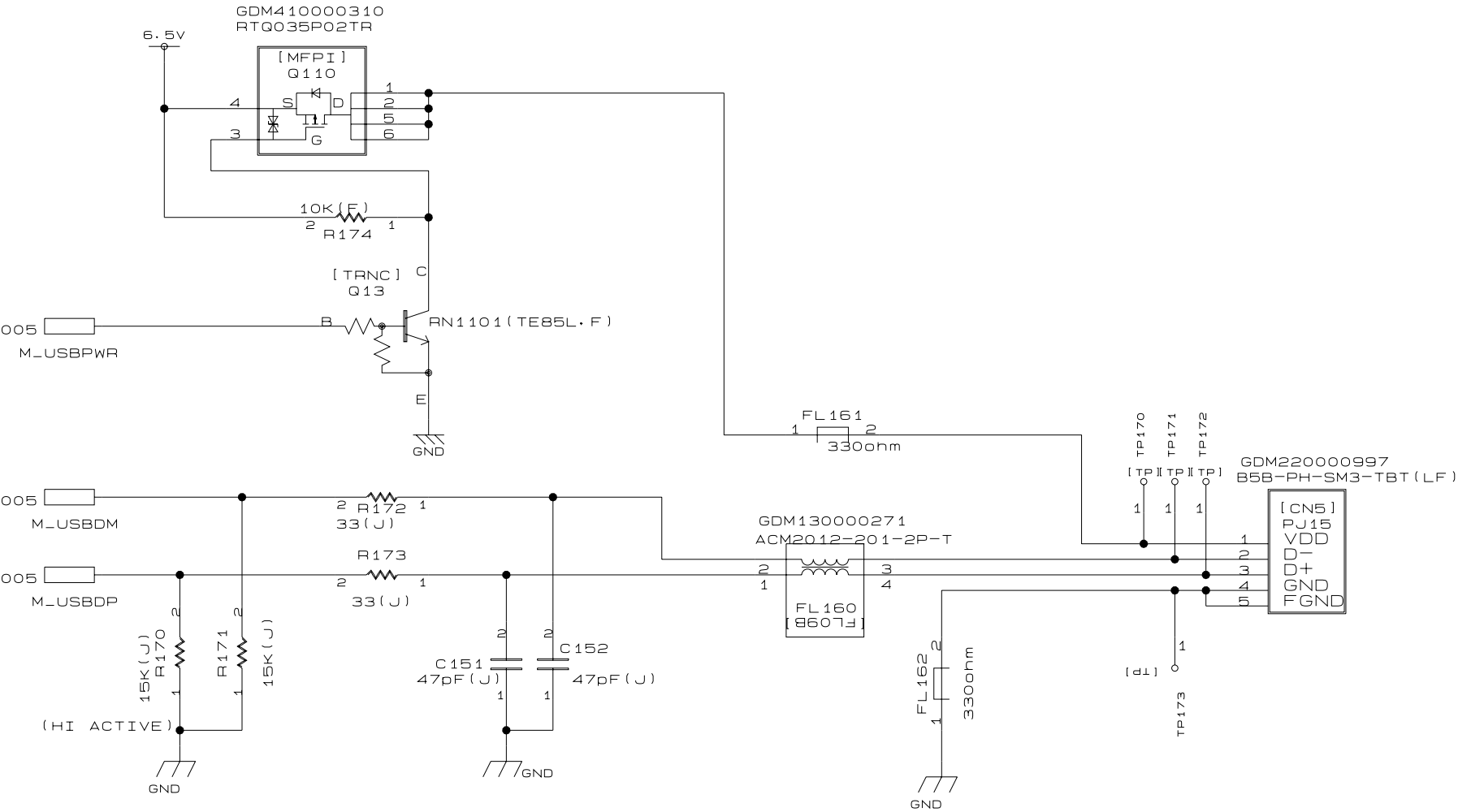
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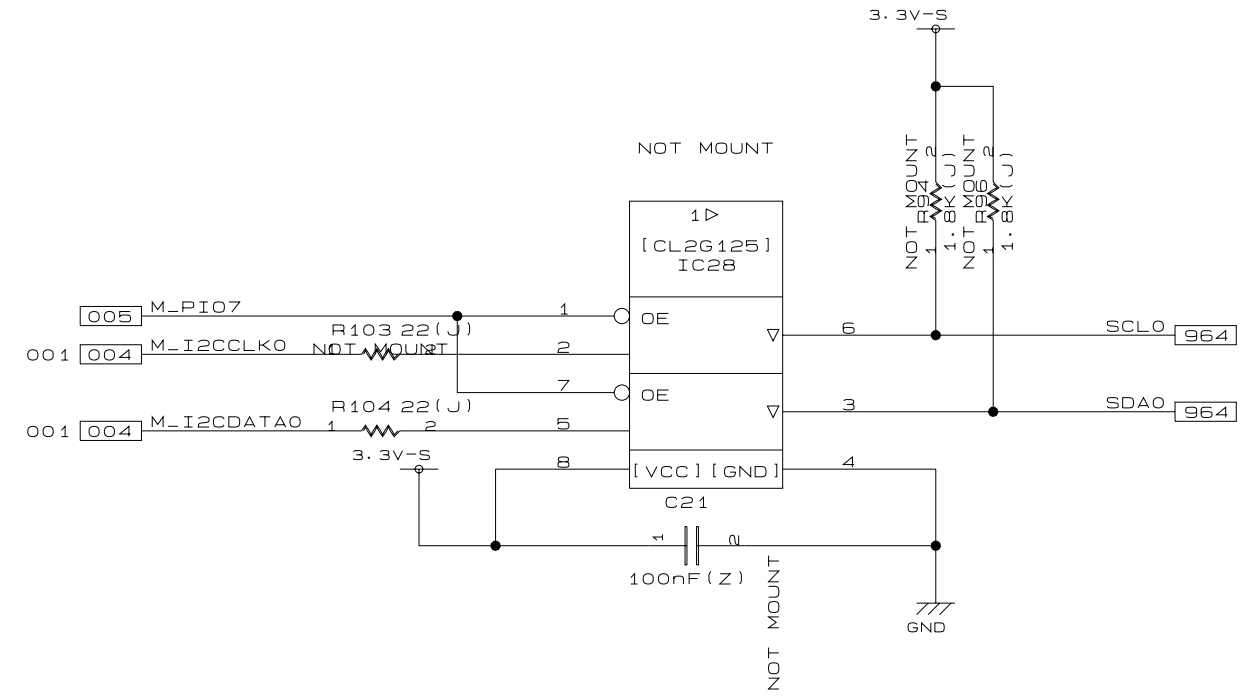
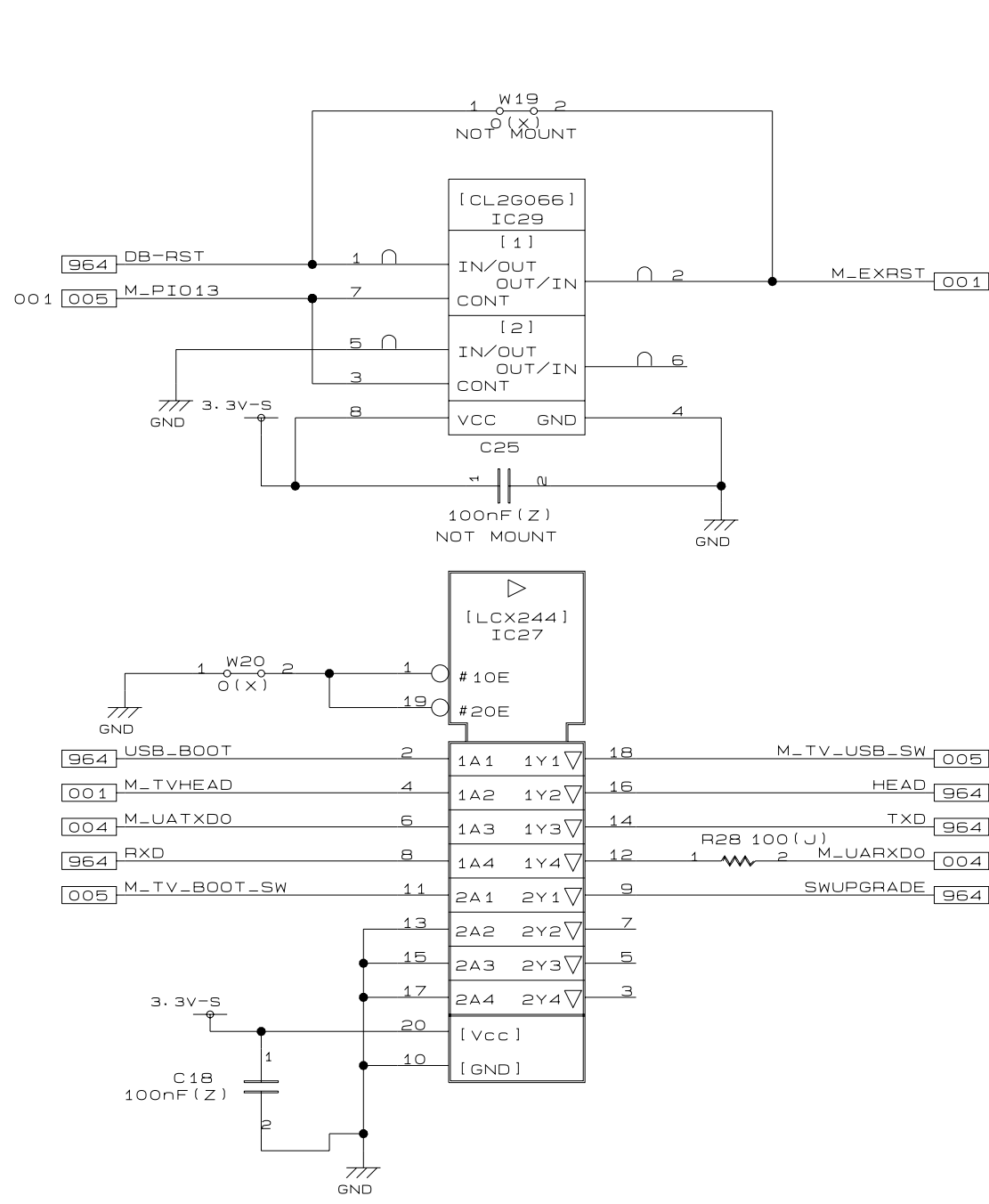
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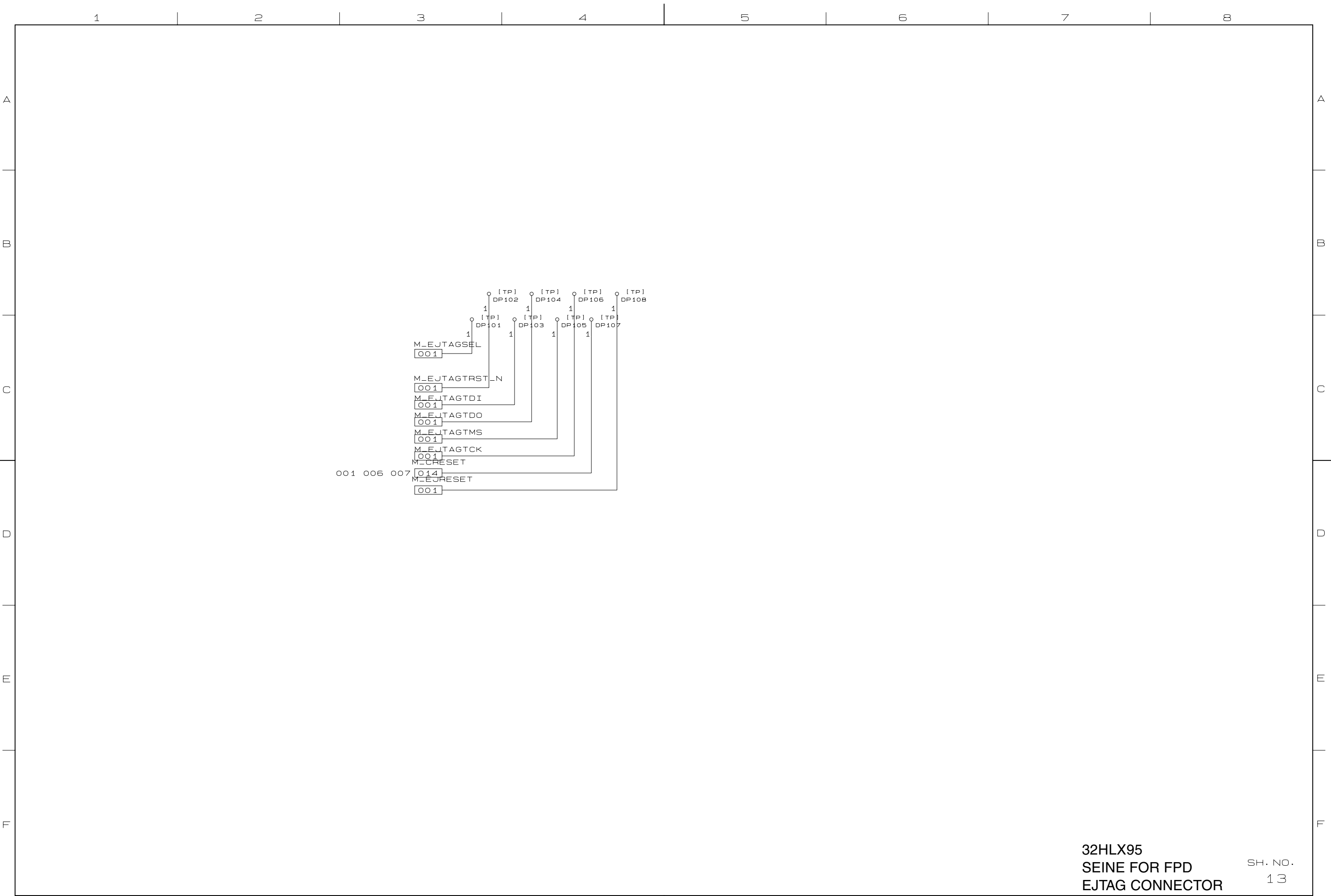
8

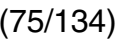
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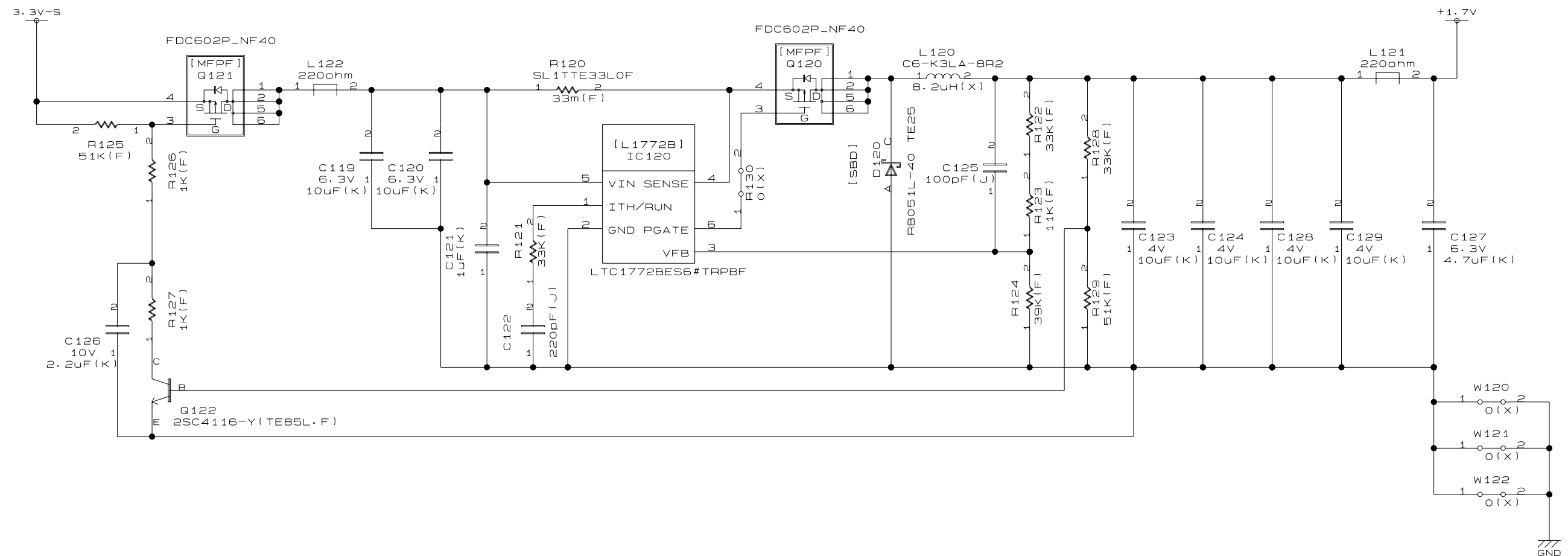


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32HLX95
SEINE FOR FPD
MPU POWER

SH. NO.
016

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A

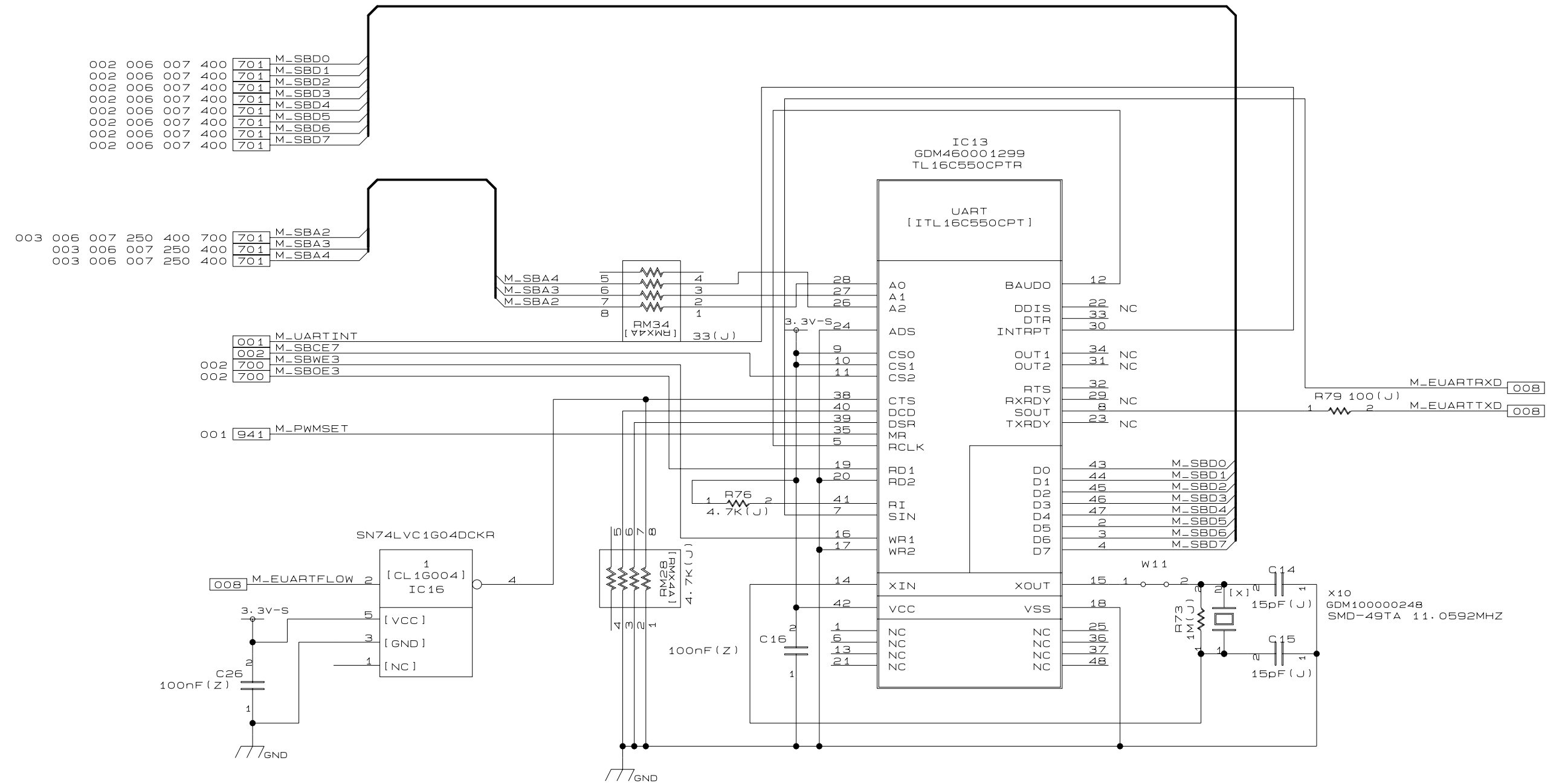
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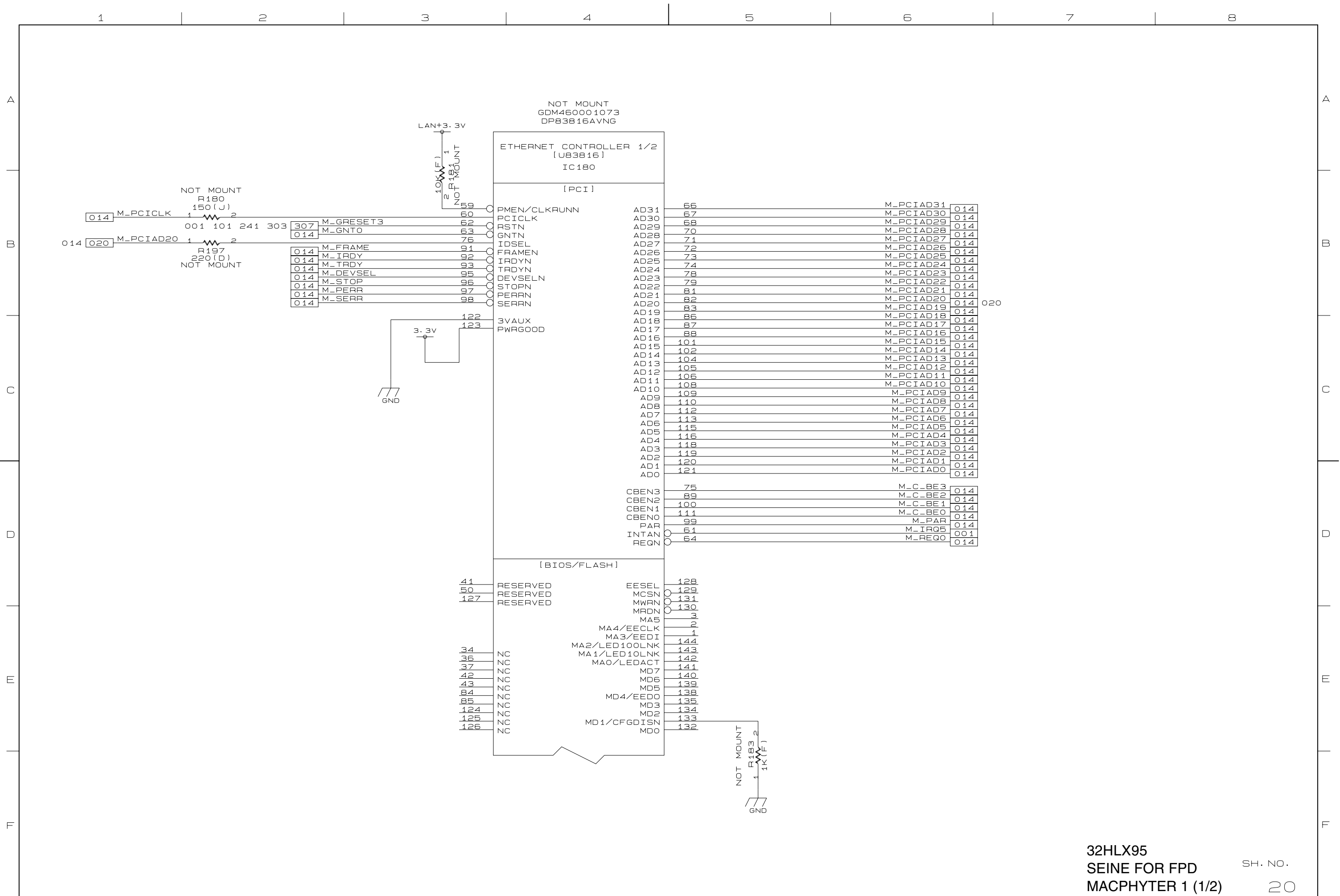
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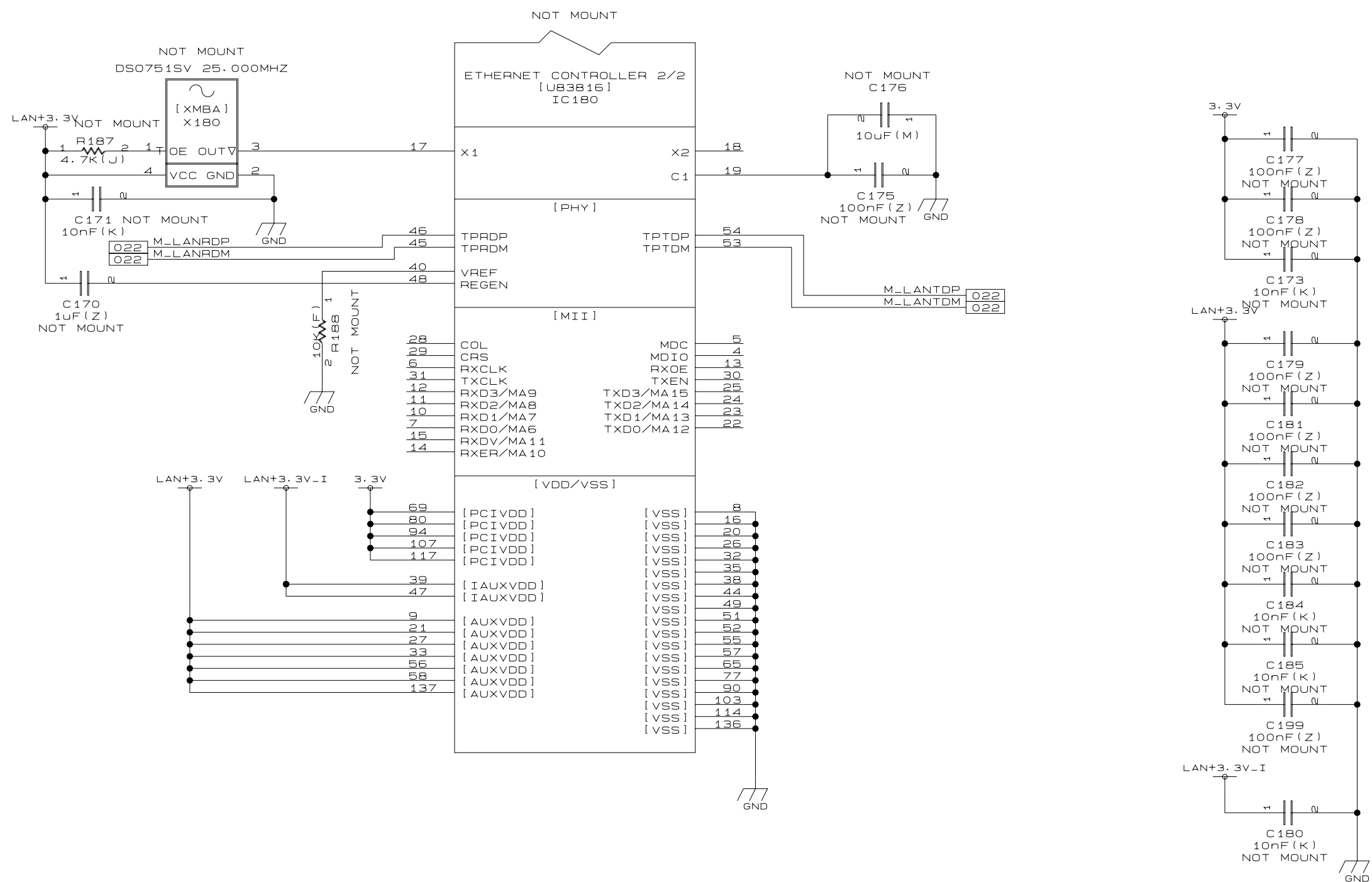
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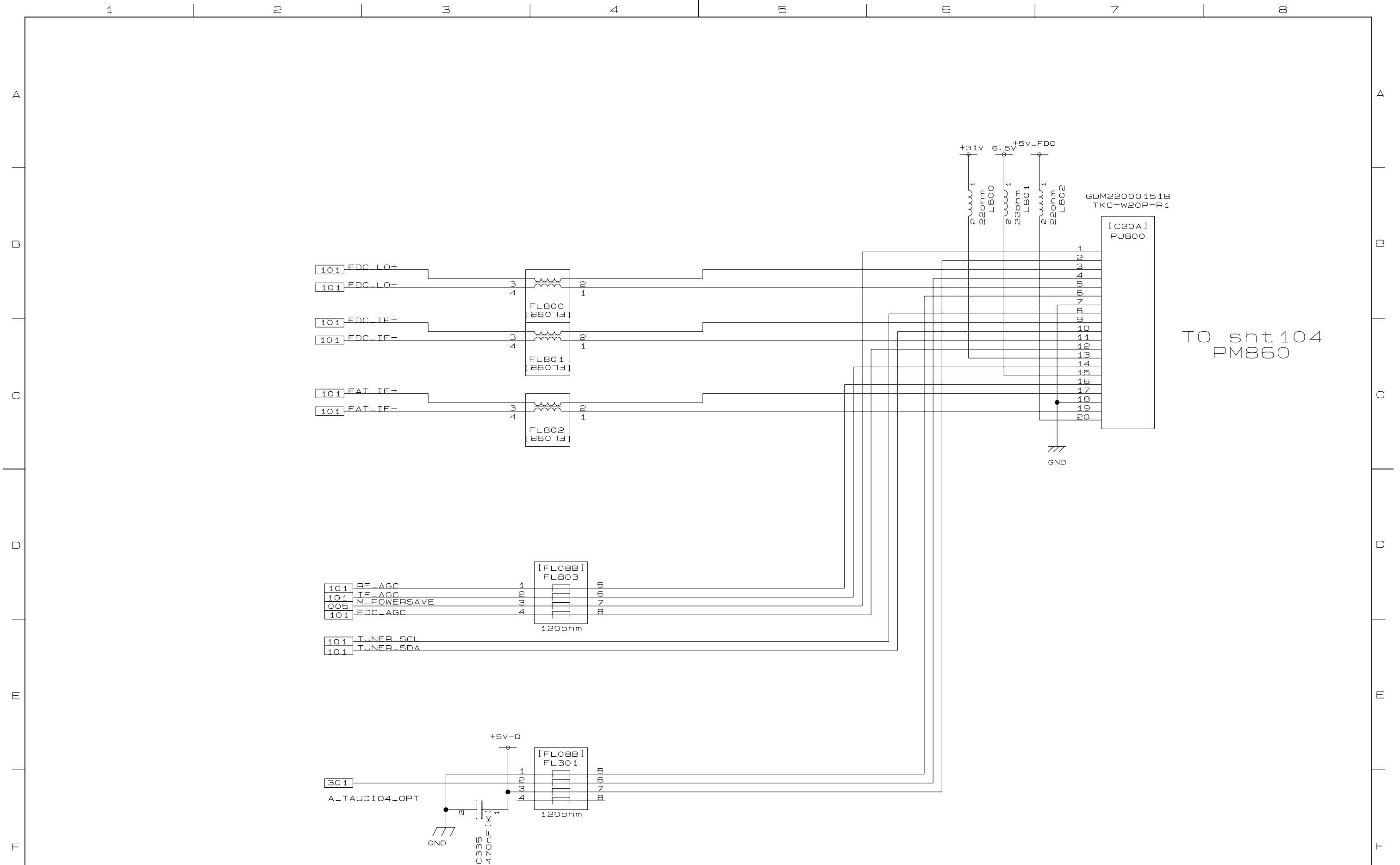
32HLX95
SEINE FOR FPD
Ext UART

SH. NO.
17



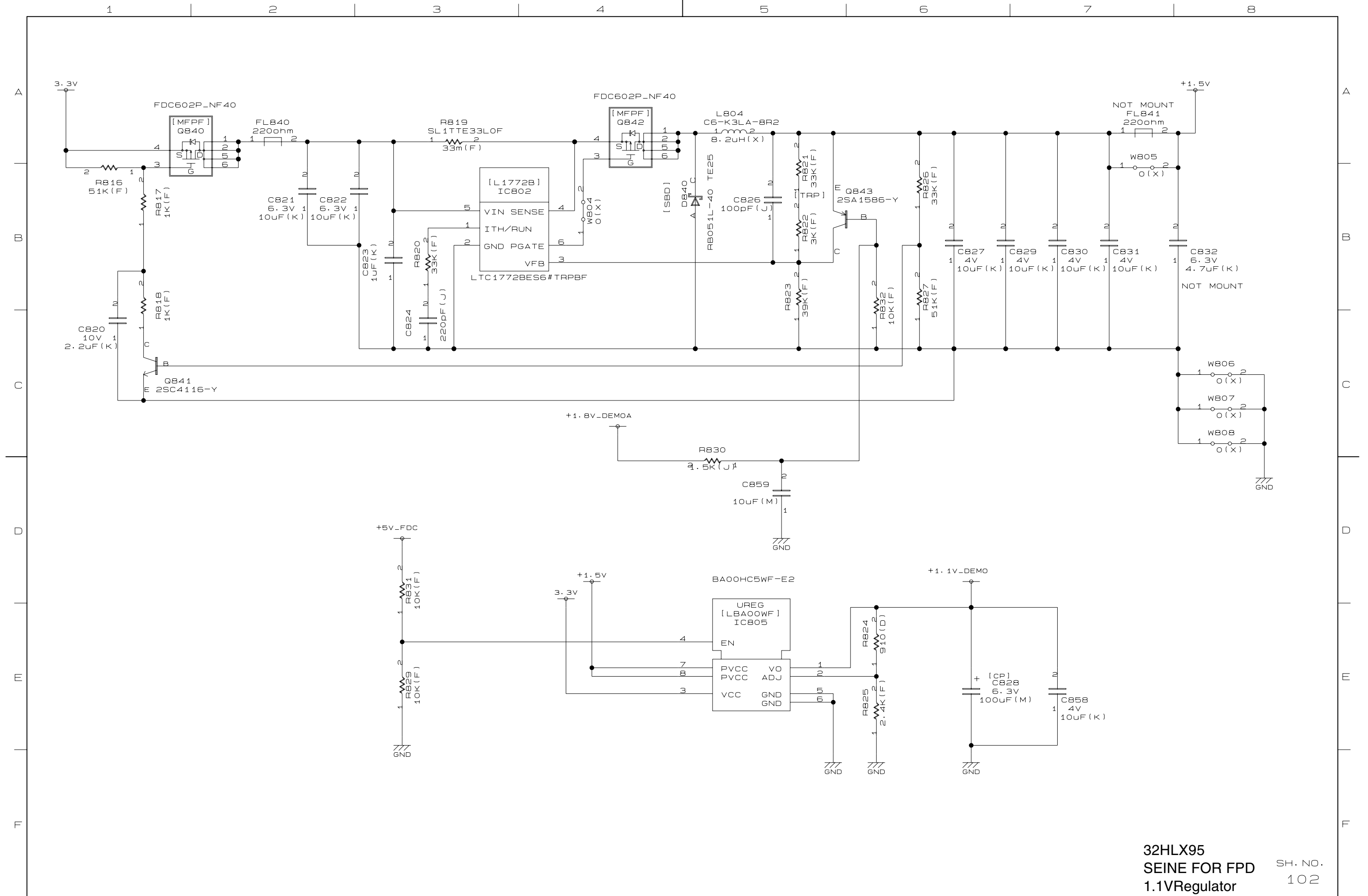


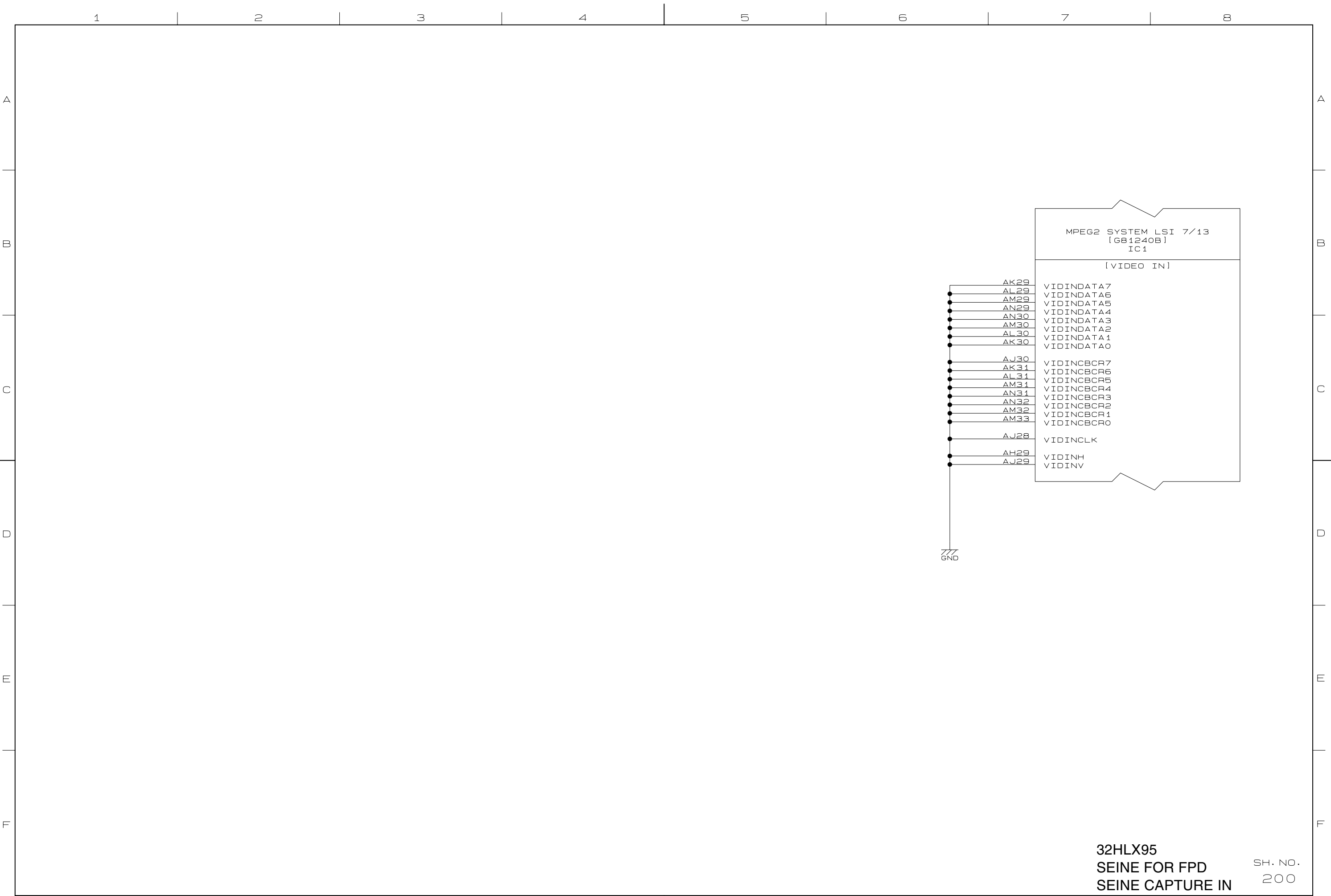
21

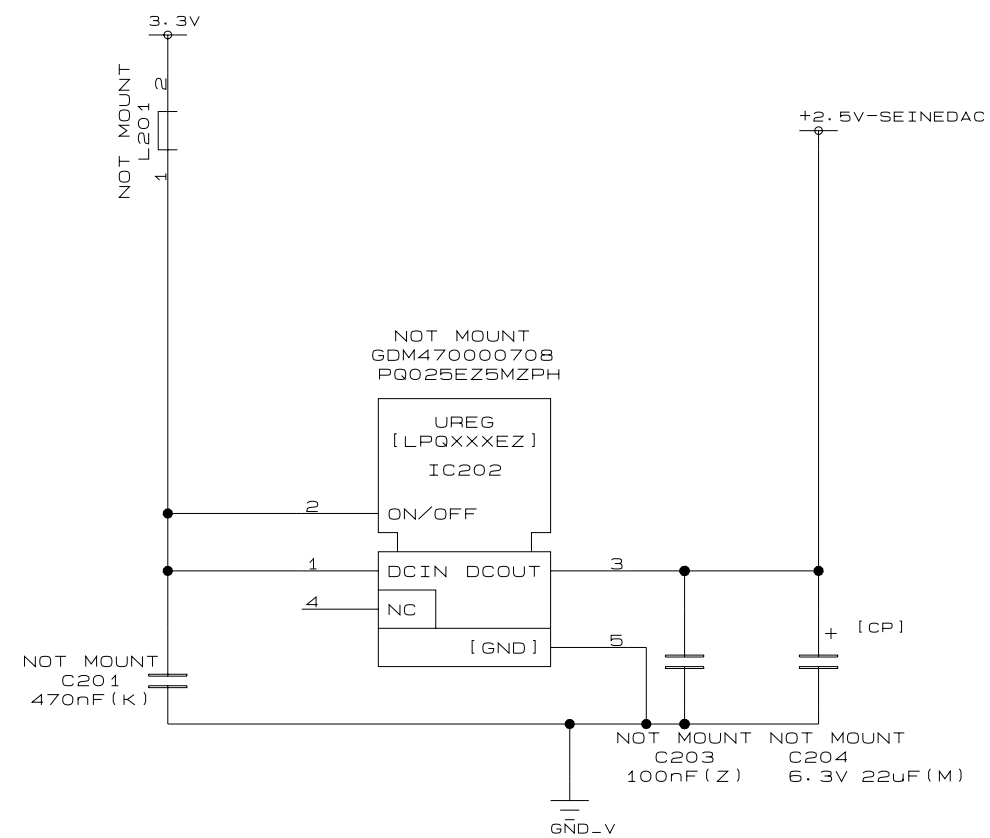
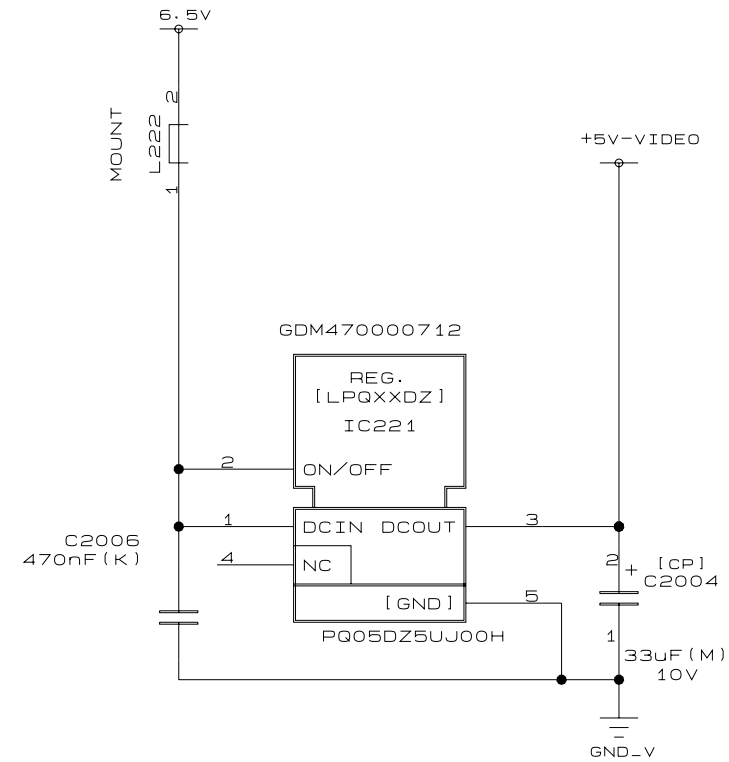
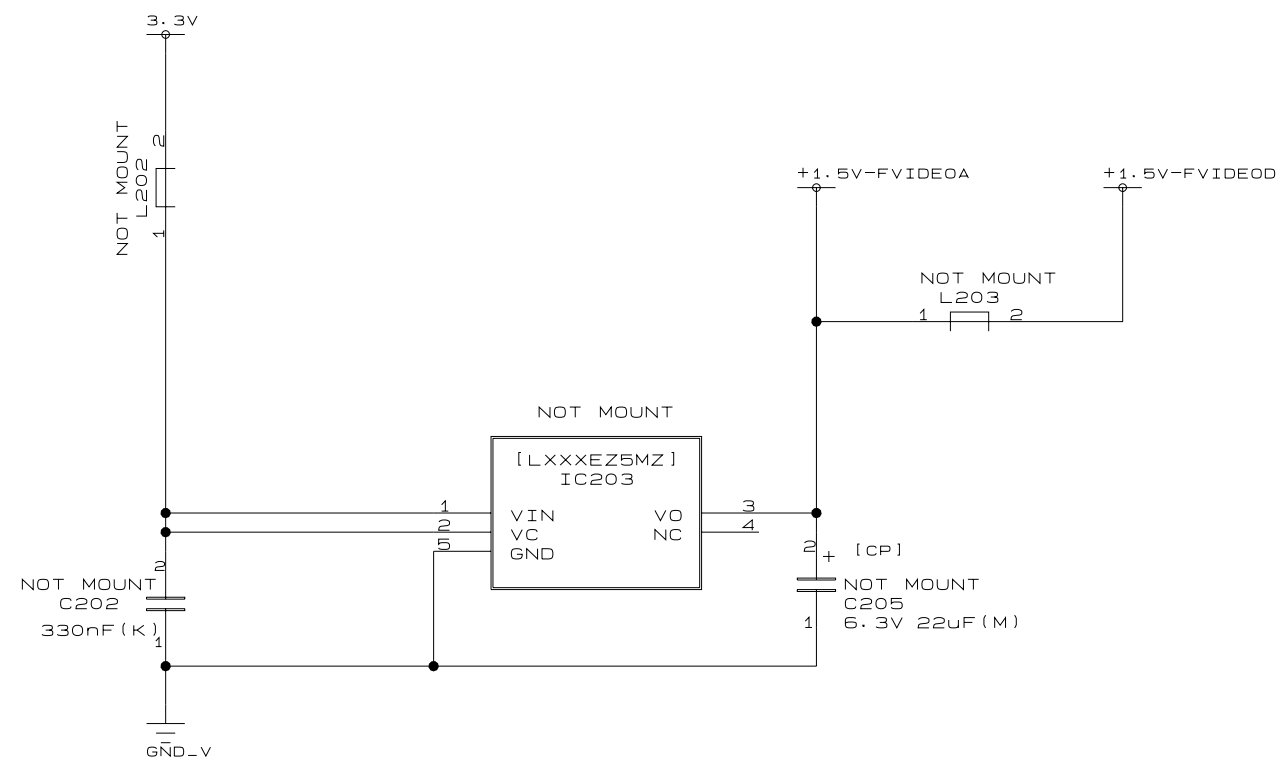


32HLX95
SEINE FOR FPD
TUENR CONNECTOR

SH. NO.
100







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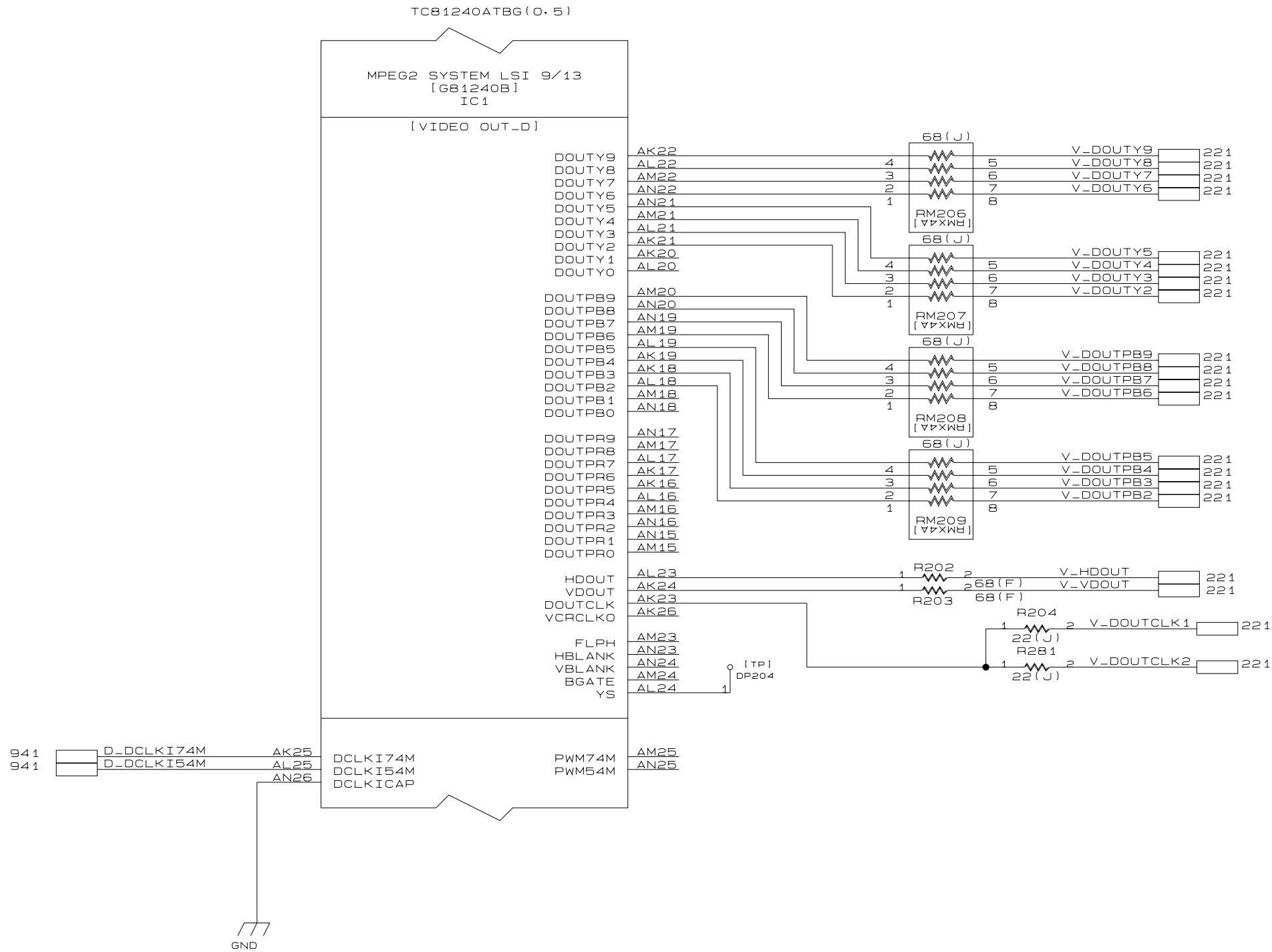
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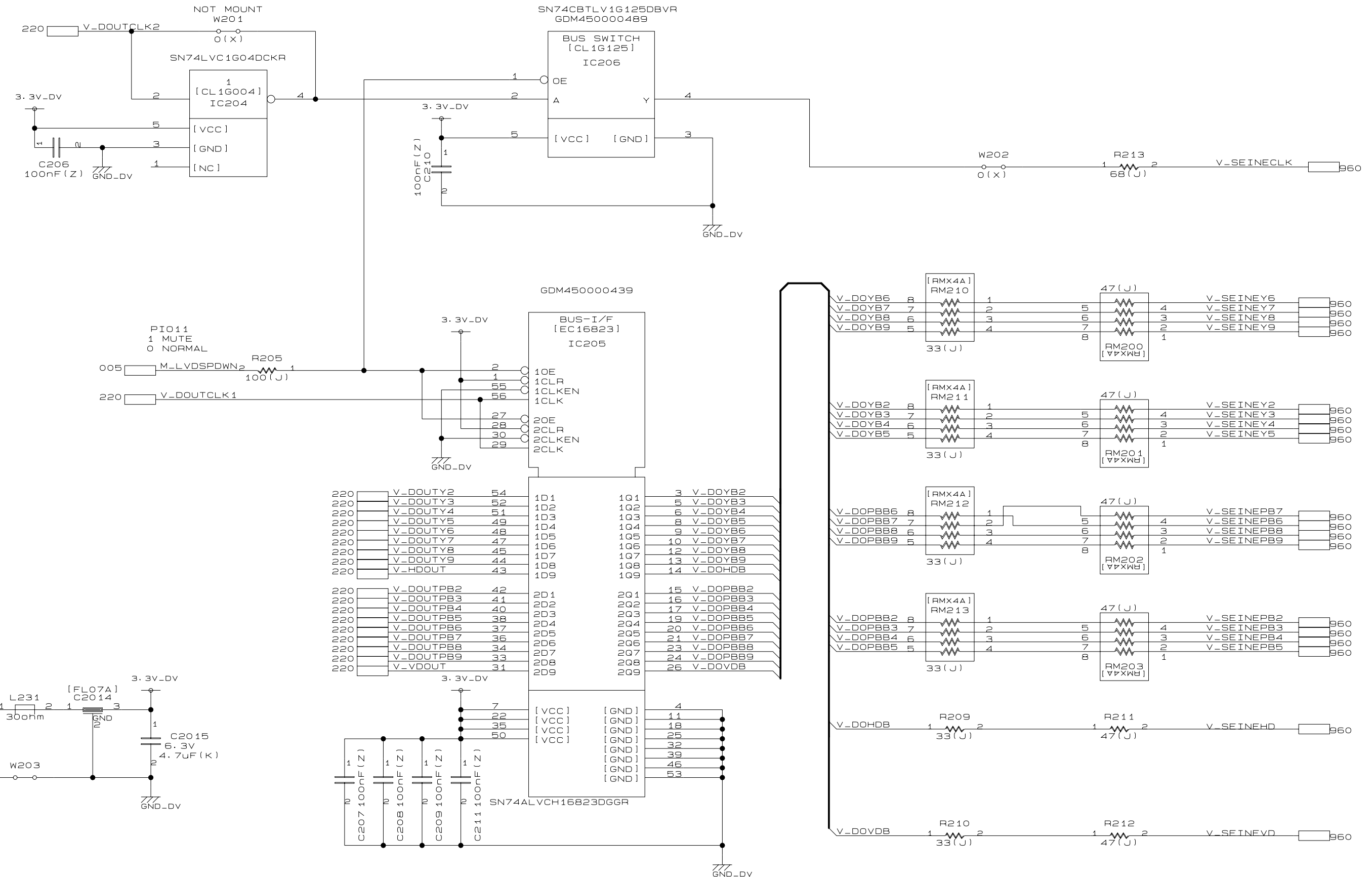


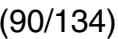
32HLX95
SEINE FOR FPD
SEINE DIGITAL OUT

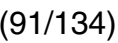
SH. NO.
220

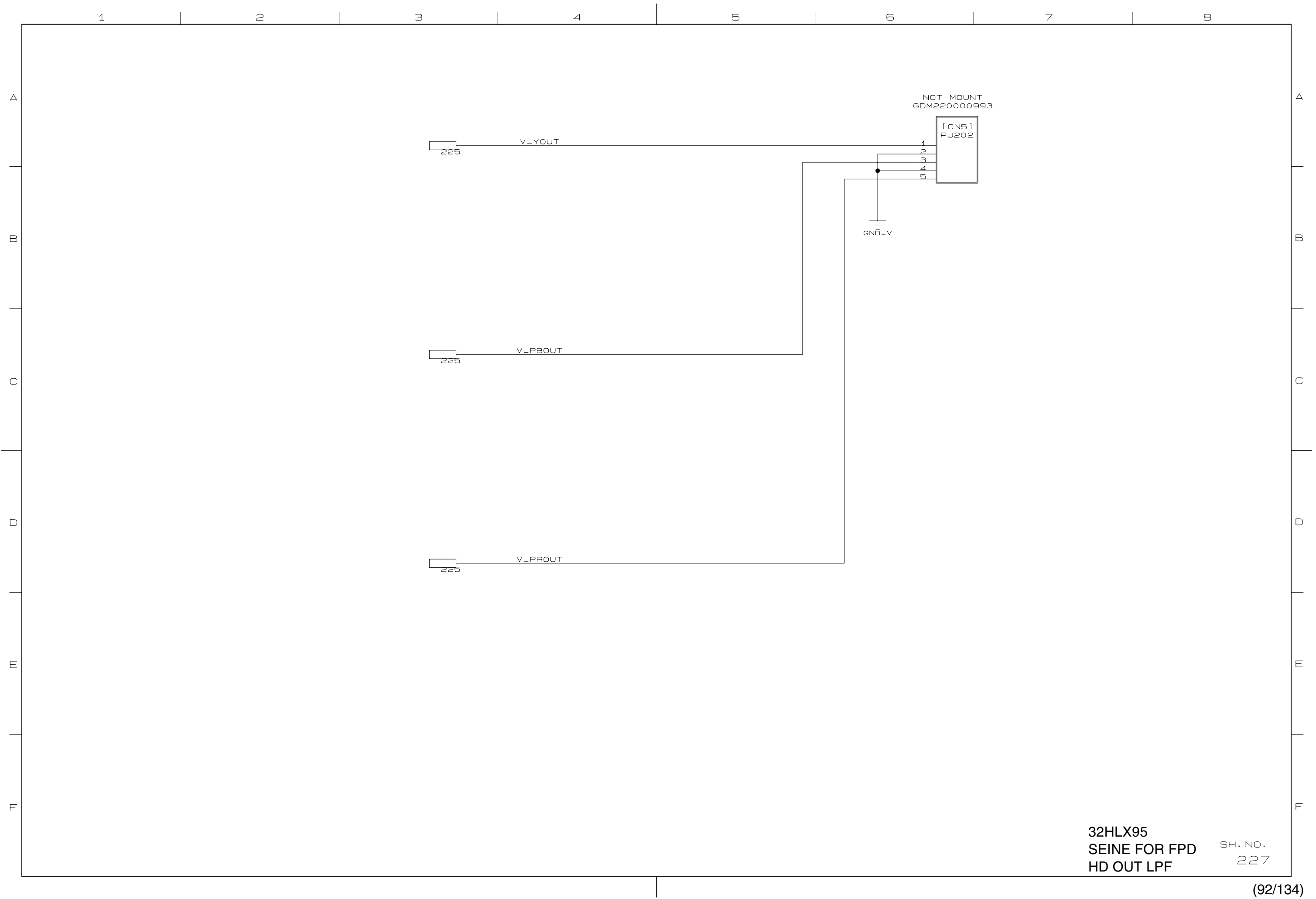
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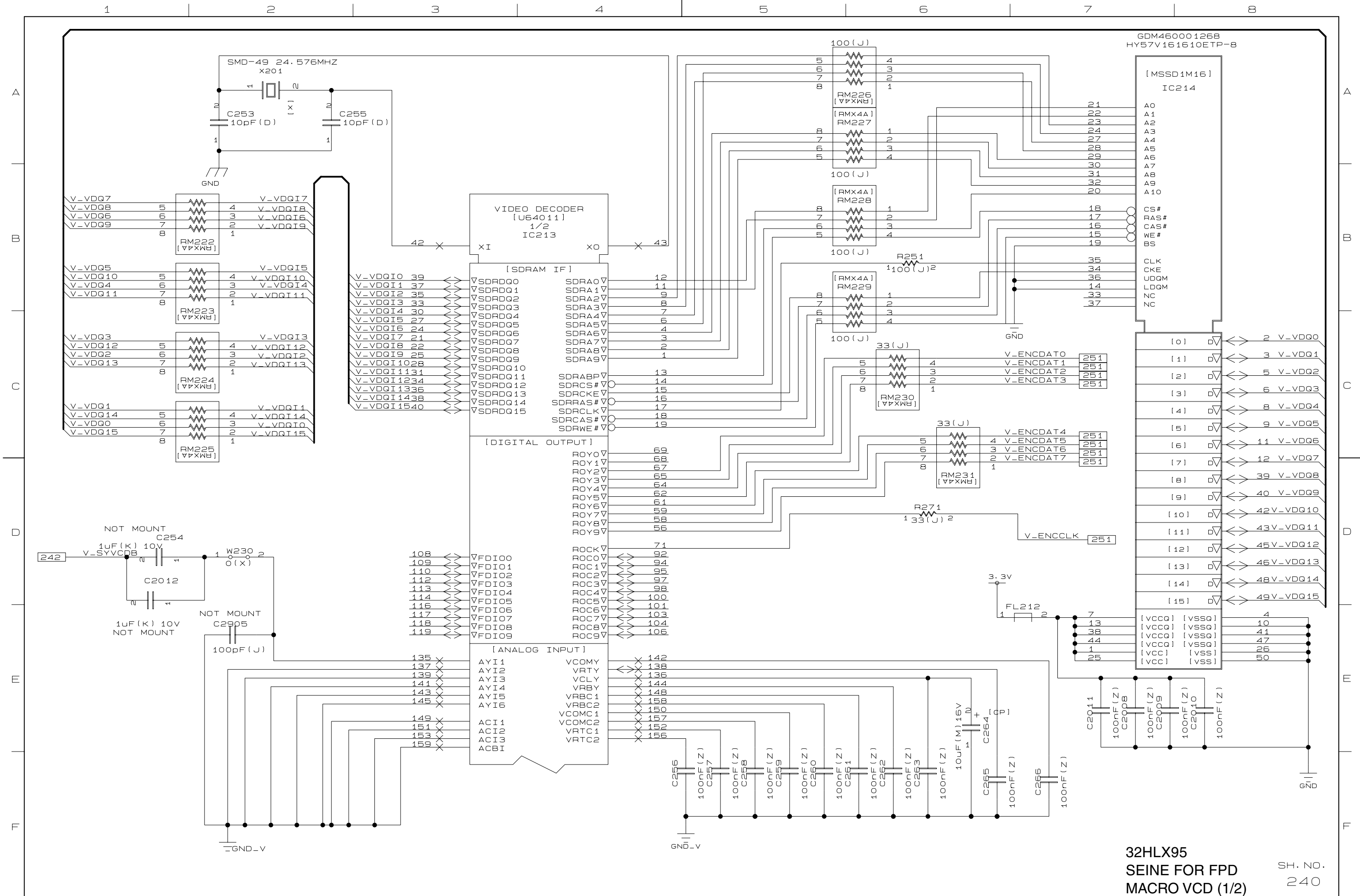
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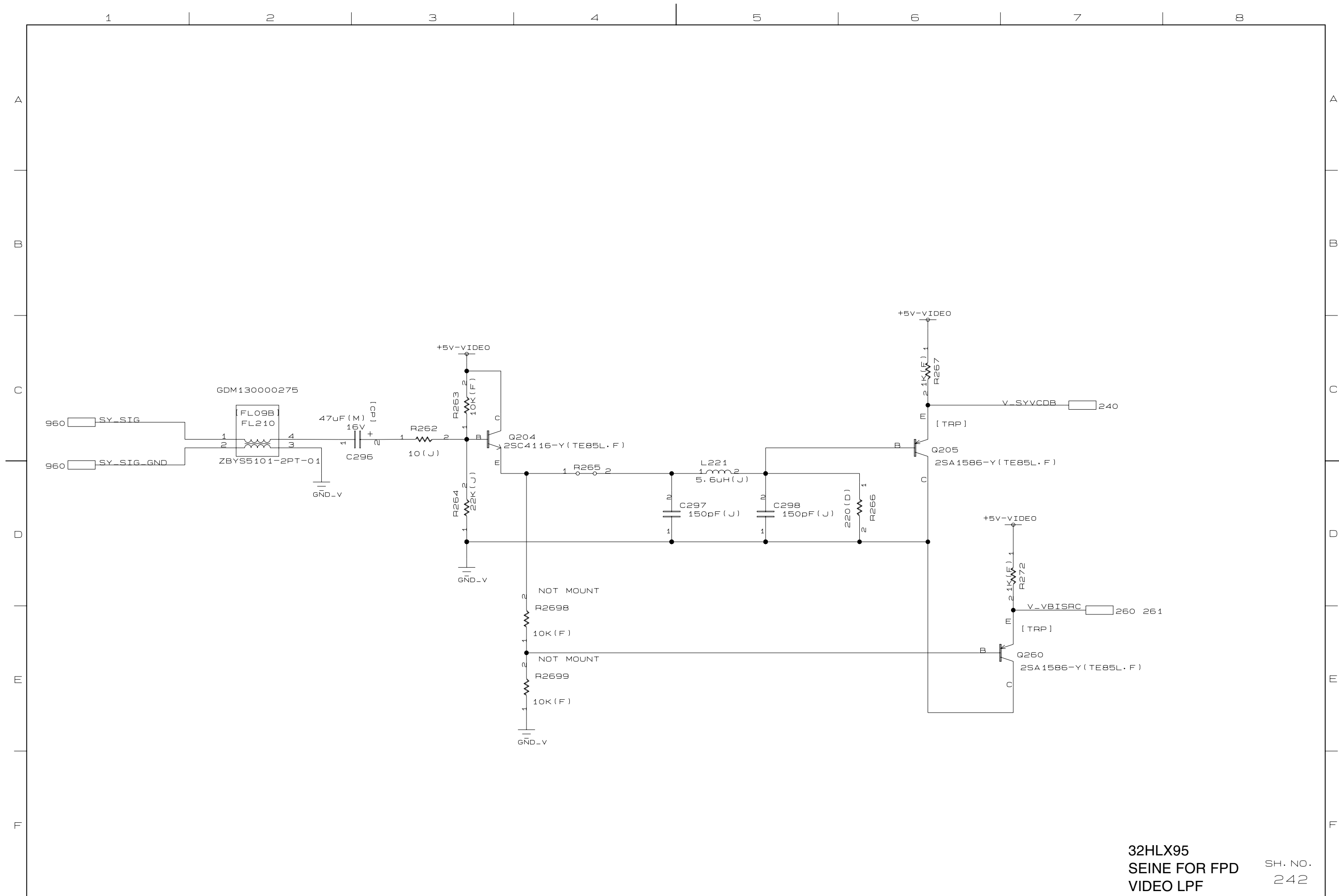












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GDM460001215
EDS6432AFTA-6B-E

SDRAM 64Mbit
[MSSD2M32]
IC250

Elpida:EDS6432AFTA

GDM460001099
UPD61052GD-LML-A

uPD61052 1/4
[U61052]
IC255

[Clock and Reset]

SCLK
STCLK
PSTOP
RESET

[Host CPU Interface]

CA0/FA0
CA1/FA1
CA2/FA2
CA3/FA3
CA4/FA4
CA5/FA5

CD0/FD0
CD1/FD1
CD2/FD2
CD3/FD3
CD4/FD4
CD5/FD5
CD6/FD6
CD7/FD7

CWAIT/F0E
CINT

[SDRAM Interface]

MD0
MD1
MD2
MD3
MD4
MD5
MD6
MD7
MD8
MD9
MD10
MD11
MD12
MD13
MD14
MD15
MD16
MD17
MD18
MD19
MD20
MD21
MD22
MD23
MD24
MD25
MD26
MD27
MD28
MD29
MD30
MD31

MA0
MA1
MA2
MA3
MA4
MA5
MA6
MA7
MA8
MA9
MA10
MA11
MA12
MA13

MCS
MRAS
MCAS
MWE
MDQM

MCLK

MCLK

V_MEAD0
V_MEAD1
V_MEAD2
V_MEAD3
V_MEAD4
V_MEAD5
V_MEAD6
V_MEAD7
V_MEAD8
V_MEAD9
V_MEAD10
V_MEAD13
V_MEAD12
V_MECLK
V_MECKE

A0
A1
A2
A3
A4
A5
A6
A7
A8
A9
A10
BS0
BS1
CLK
CKE

V_MECS
V_MERAS
V_MECS
V_MEWE
V_MEDQM
V_MEAD0
V_MEAD1
V_MEAD2
V_MEAD3
V_MEAD5
V_MEAD6
V_MEAD7
V_MEAD8
V_MEAD10
V_MEAD12
V_MEAD13
V_MEAD4
V_MEAD9
V_MEAD11
V_MECKE
V_MECS
V_MERAS
V_MEWE
V_MEDQM
V_MEAD11

DQ0V
DQ1V
DQ2V
DQ3V
DQ4V
DQ5V
DQ6V
DQ7V
DQ8V
DQ9V
DQ10V
DQ11V
DQ12V
DQ13V
DQ14V
DQ15V
DQ16V
DQ17V
DQ18V
DQ19V
DQ20V
DQ21V
DQ22V
DQ23V
DQ24V
DQ25V
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DQ30V
DQ31V
V_MEDQ0
V_MEDQ1
V_MEDQ2
V_MEDQ3
V_MEDQ4
V_MEDQ5
V_MEDQ6
V_MEDQ7
V_MEDQ8
V_MEDQ9
V_MEDQ10
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V_MEDQ21
V_MEDQ22
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V_MEDQ27
V_MEDQ28
V_MEDQ29
V_MEDQ30
V_MEDQ31

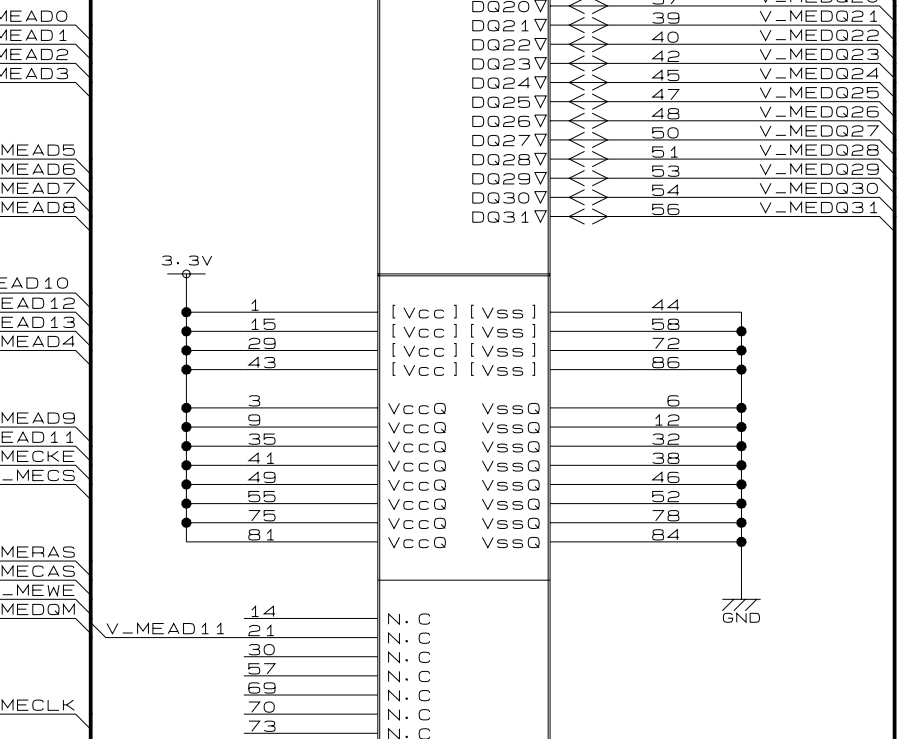
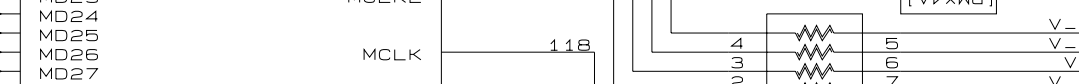
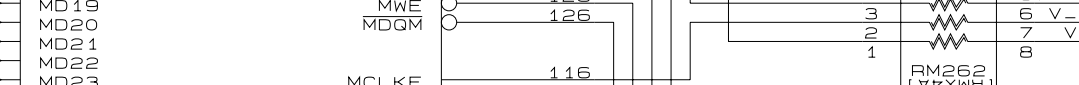
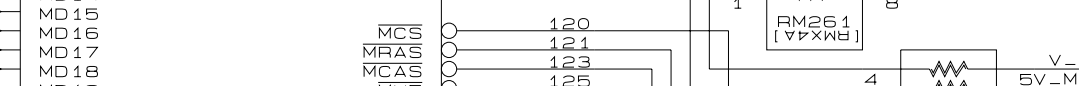
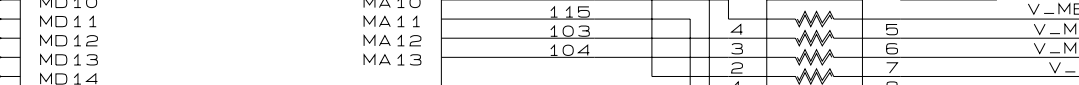
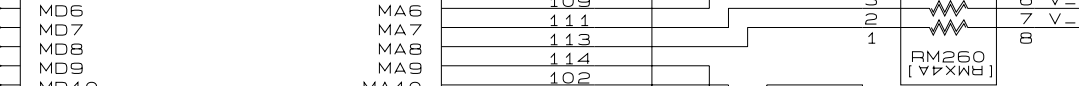
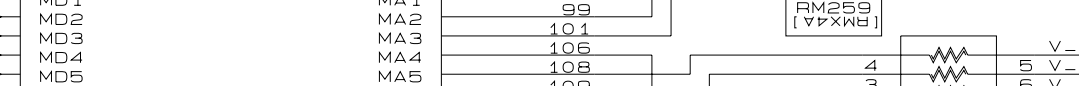
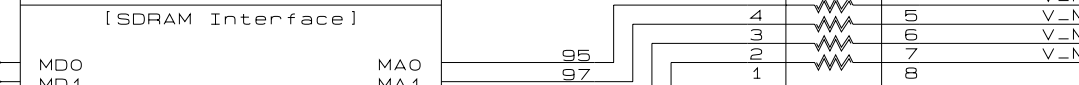
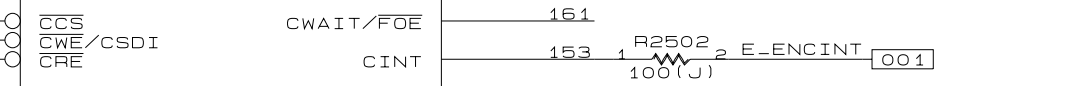
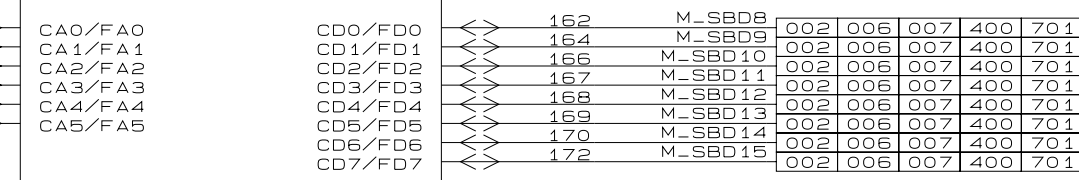
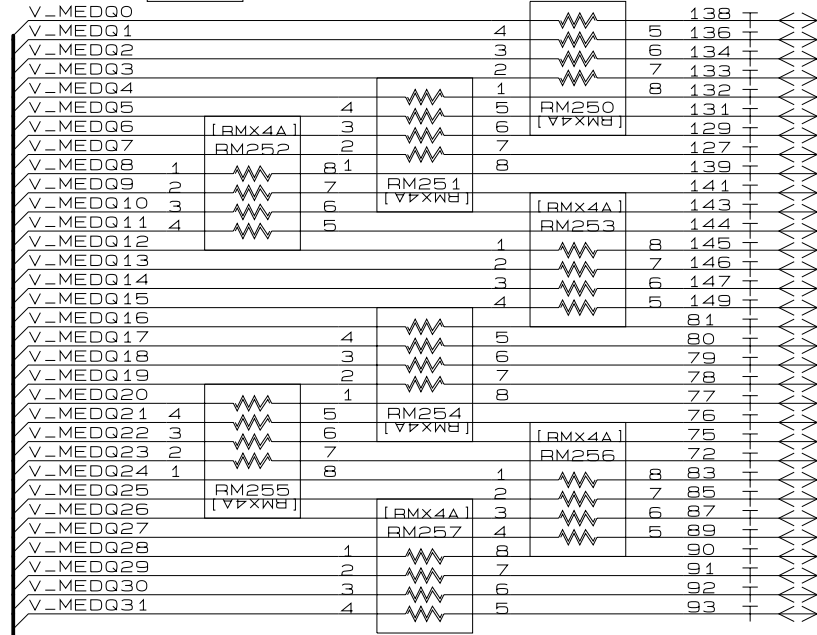
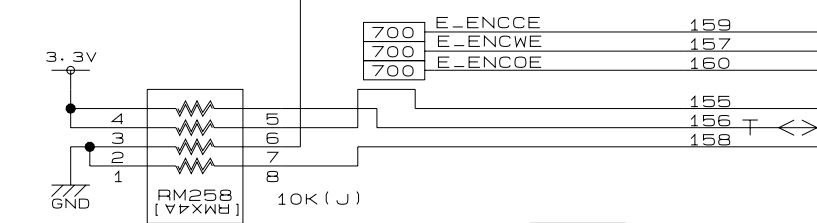
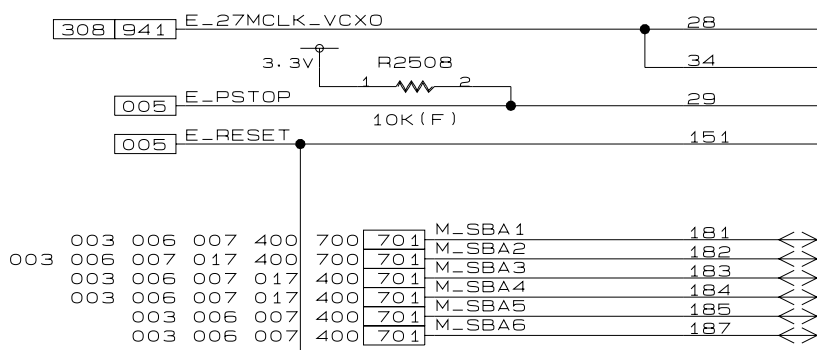
[Vcc] [Vss]
[Vcc] [Vss]
[Vcc] [Vss]
[Vcc] [Vss]

VccQ
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N.C

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58
72
86
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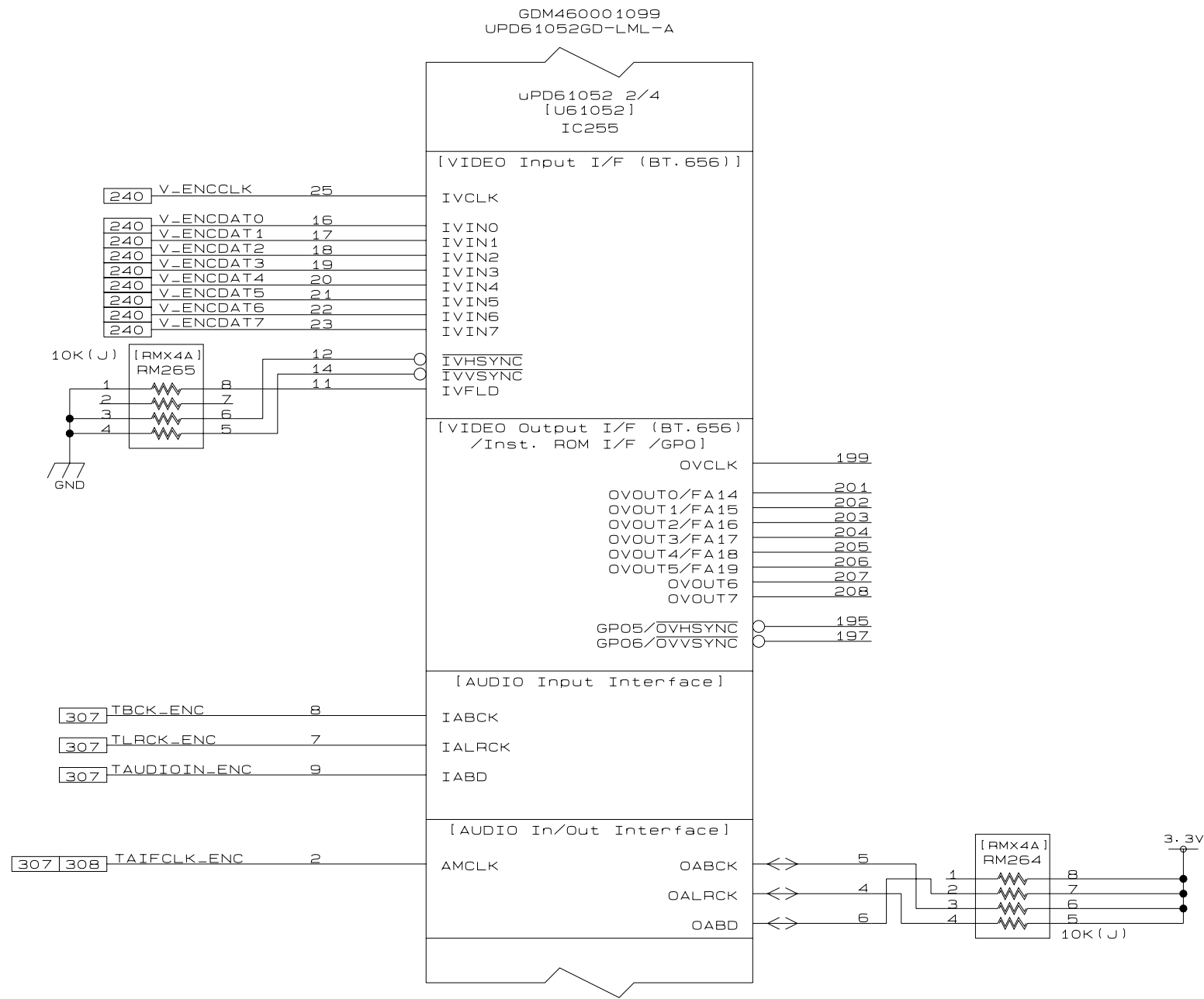
GND



32HLX95
SEINE FOR FPD
MPEG Enc. (CLK, SDRAM)

SH. NO.
250

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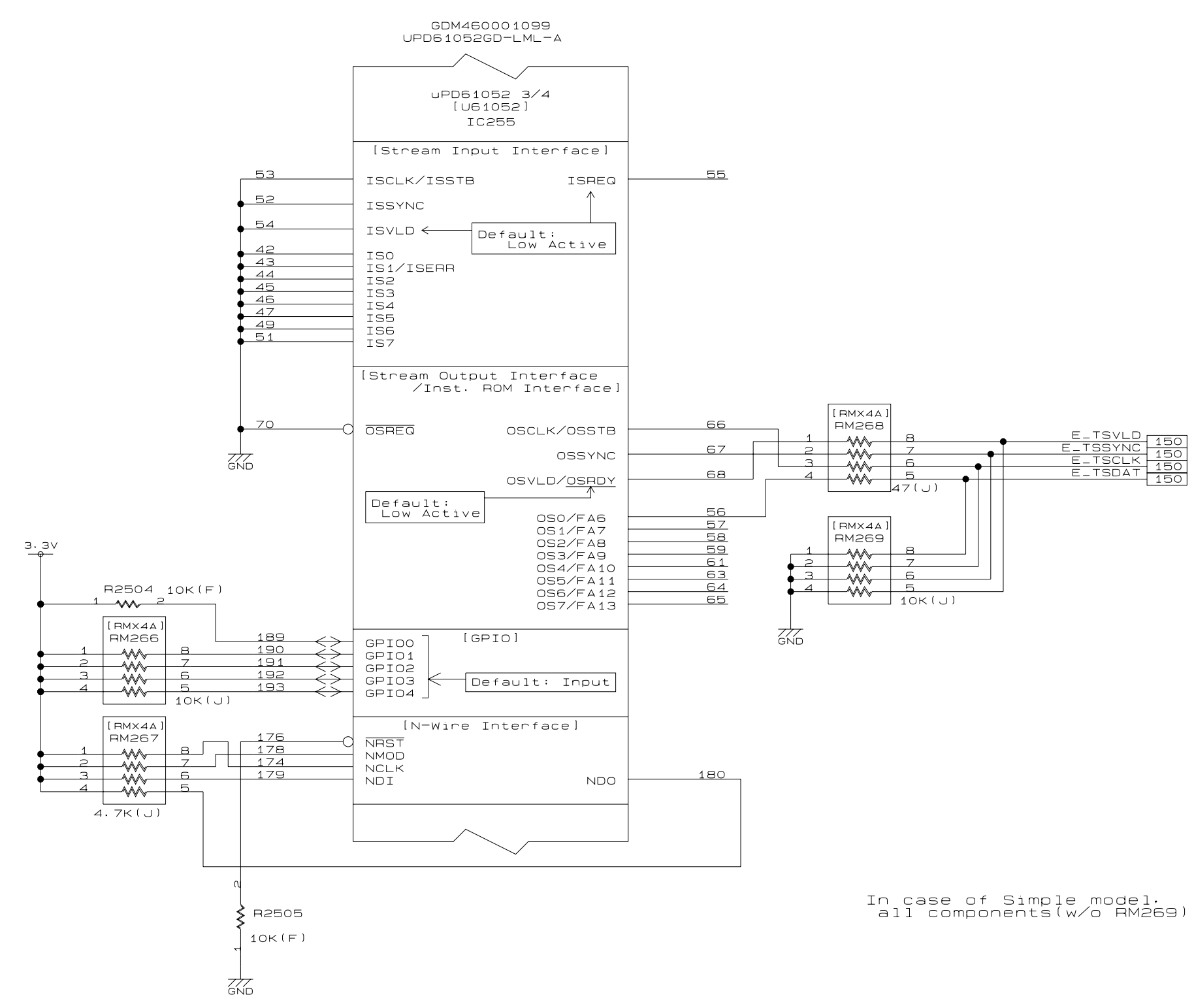


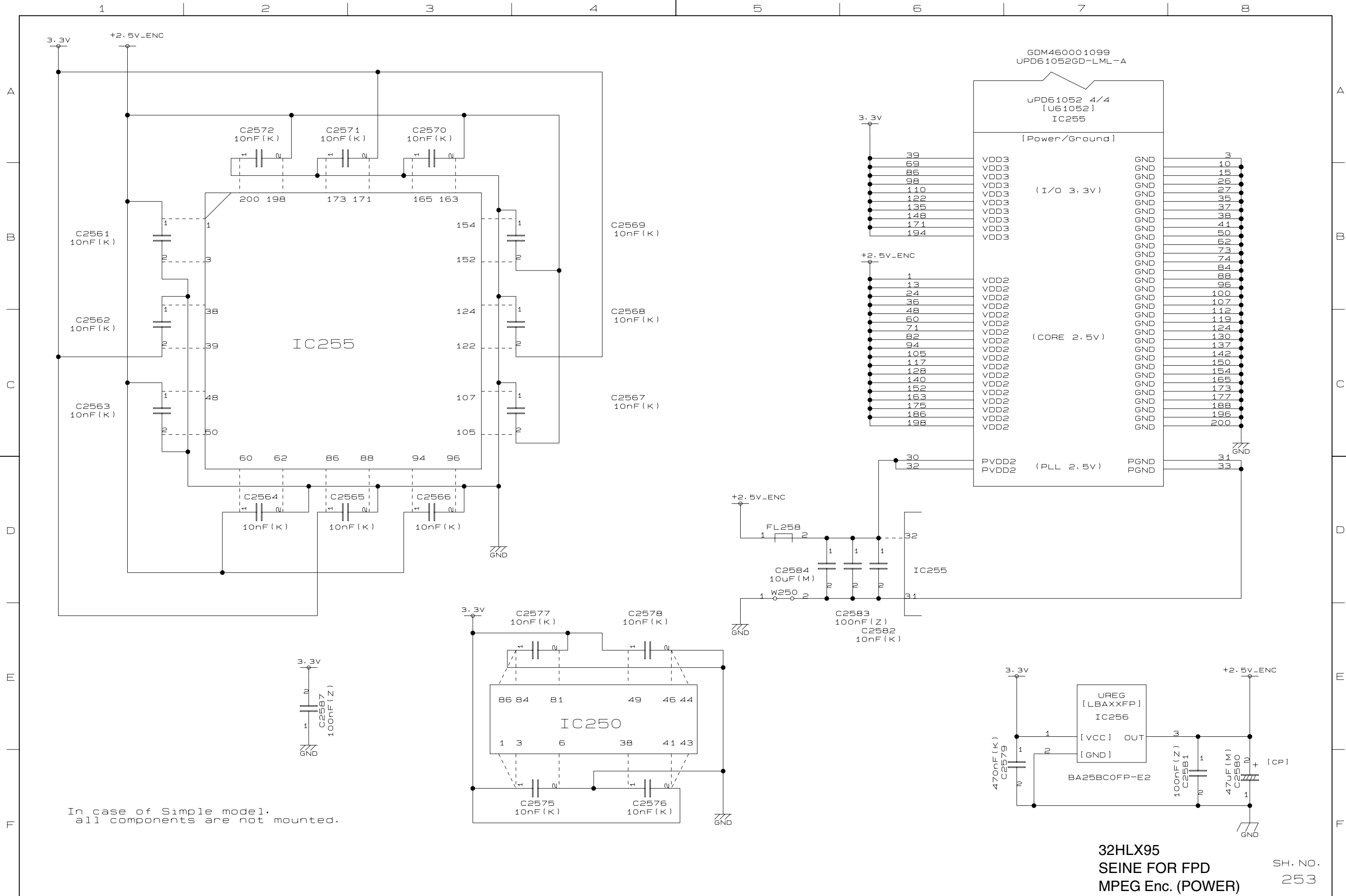
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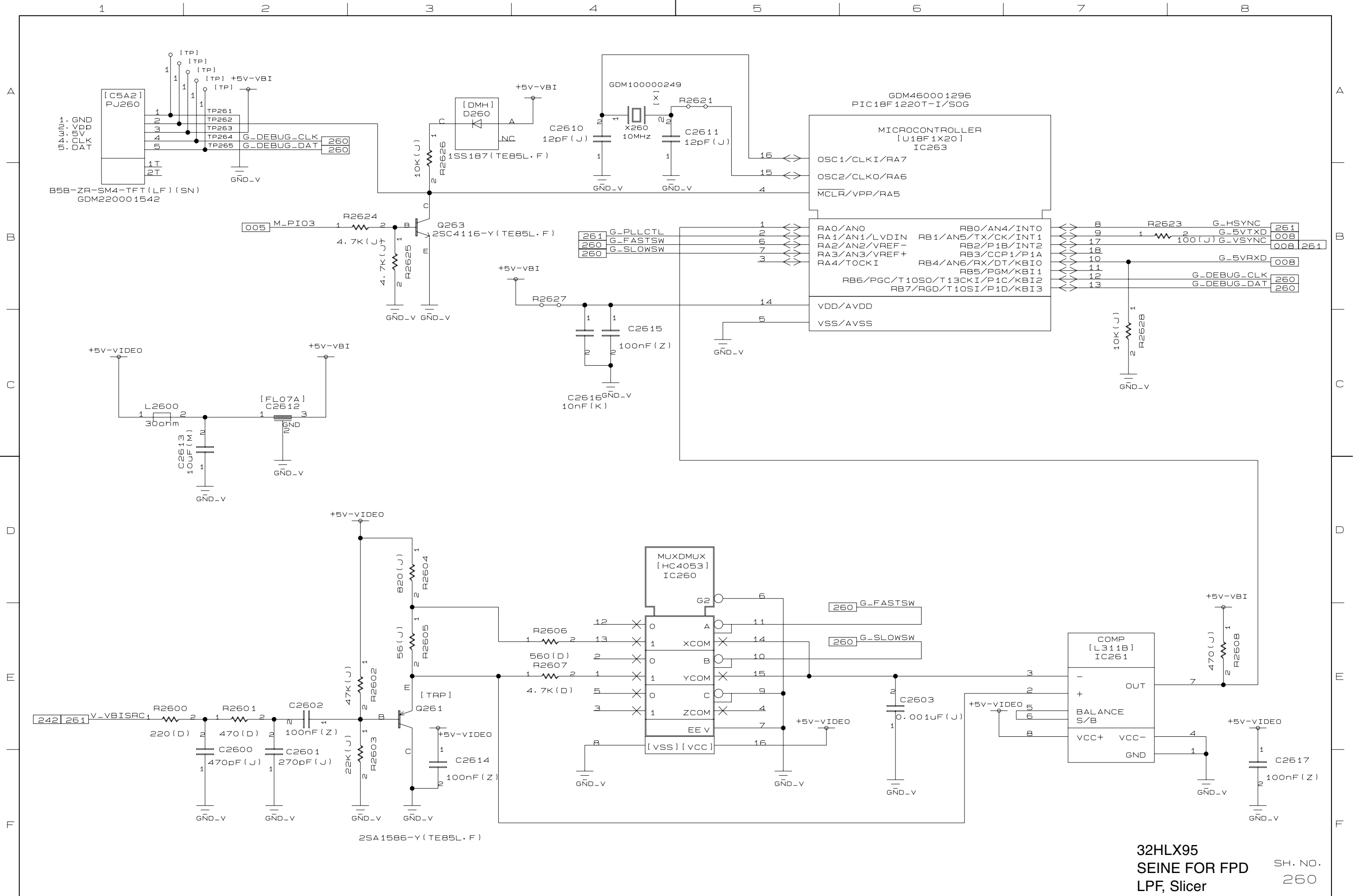
In case of Simple model.
all components are not mounted.

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32HLX95
SEINE FOR FPD
LPF, Slicer

SH. NO.
260

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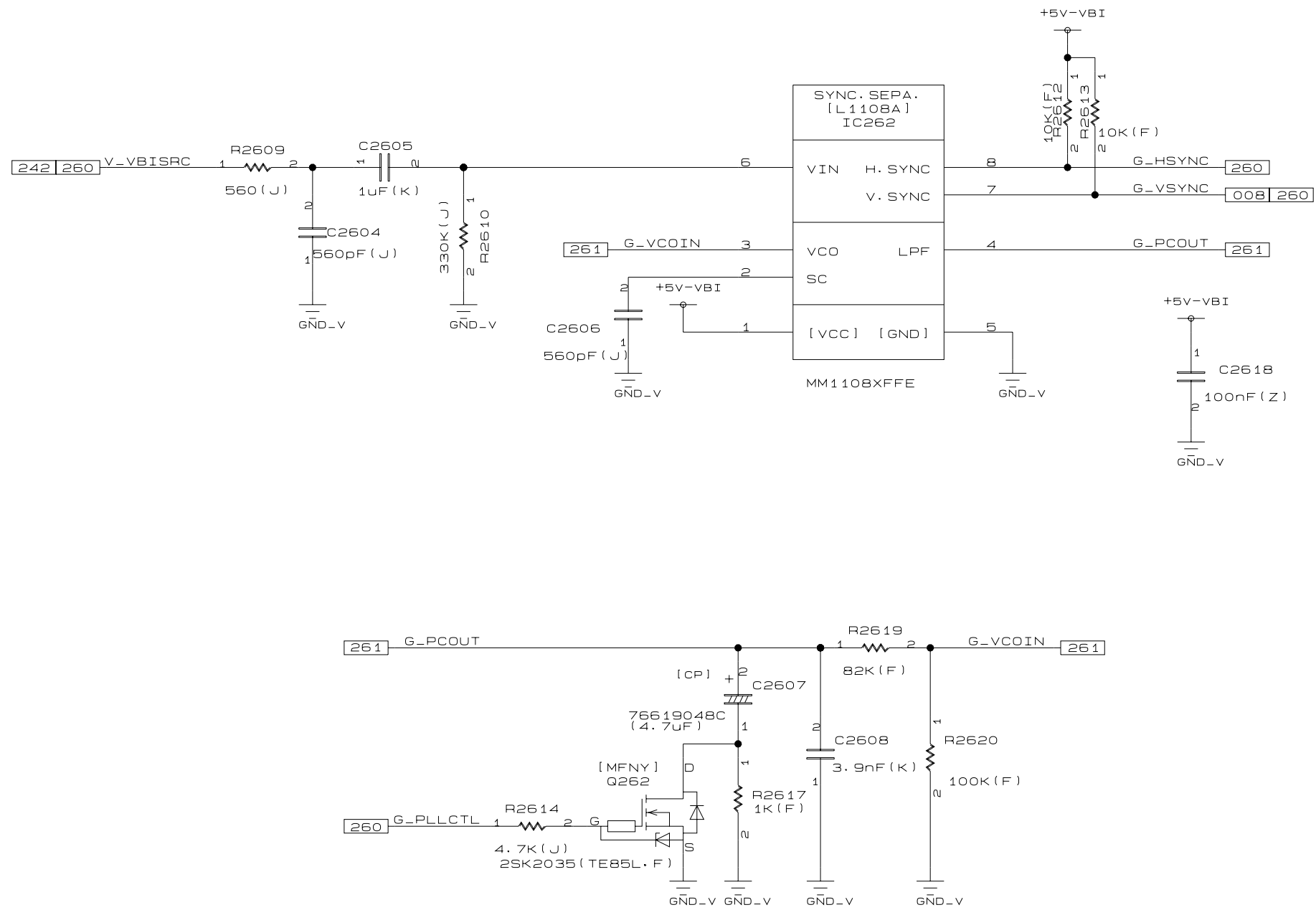
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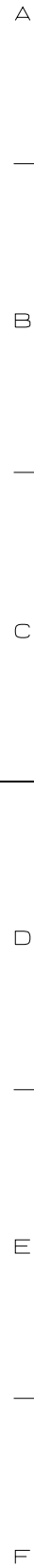
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32HLX95
SEINE FOR FPD
H/V Sync Sep.

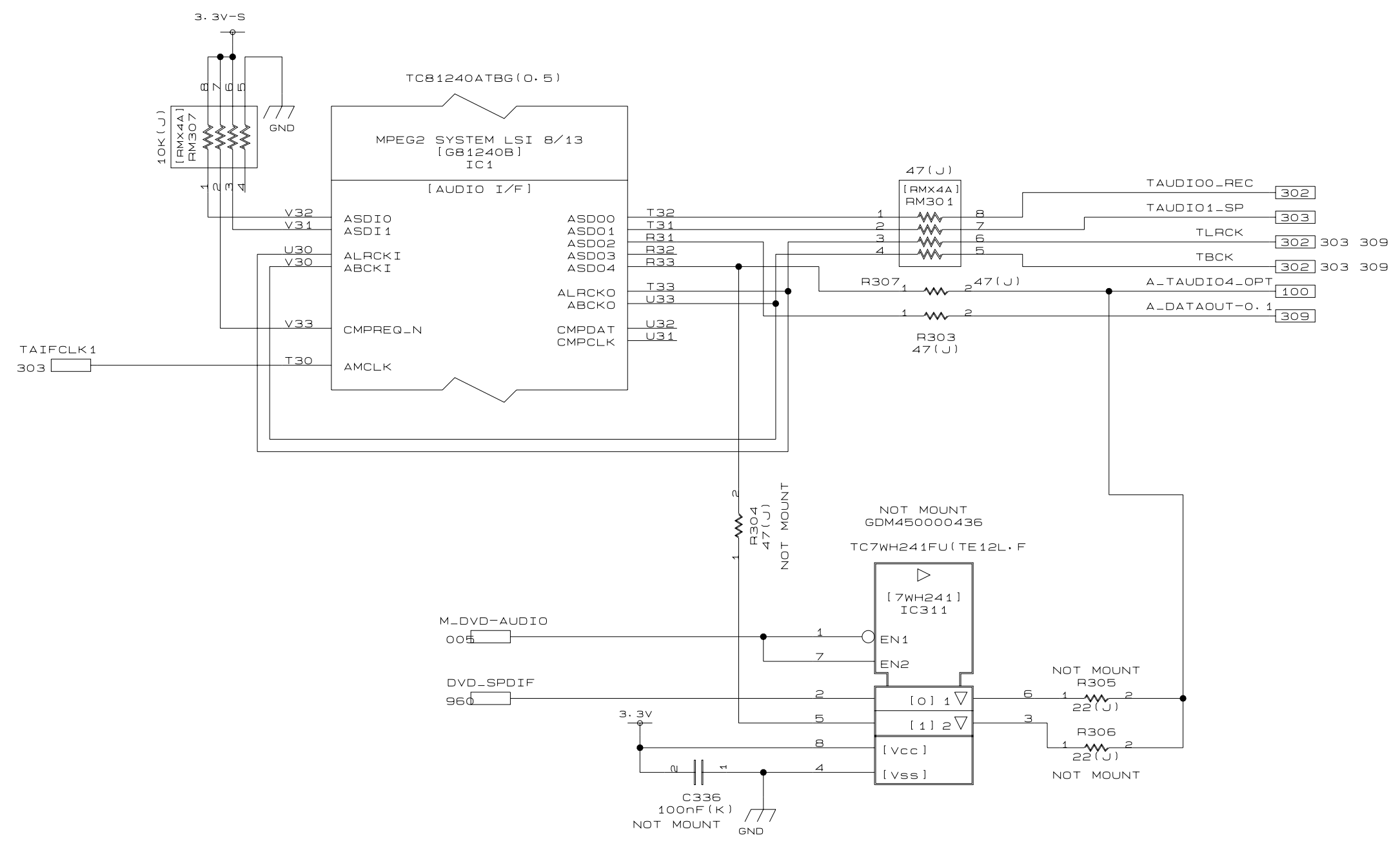
SH. NO.
261

SH. NO.
300

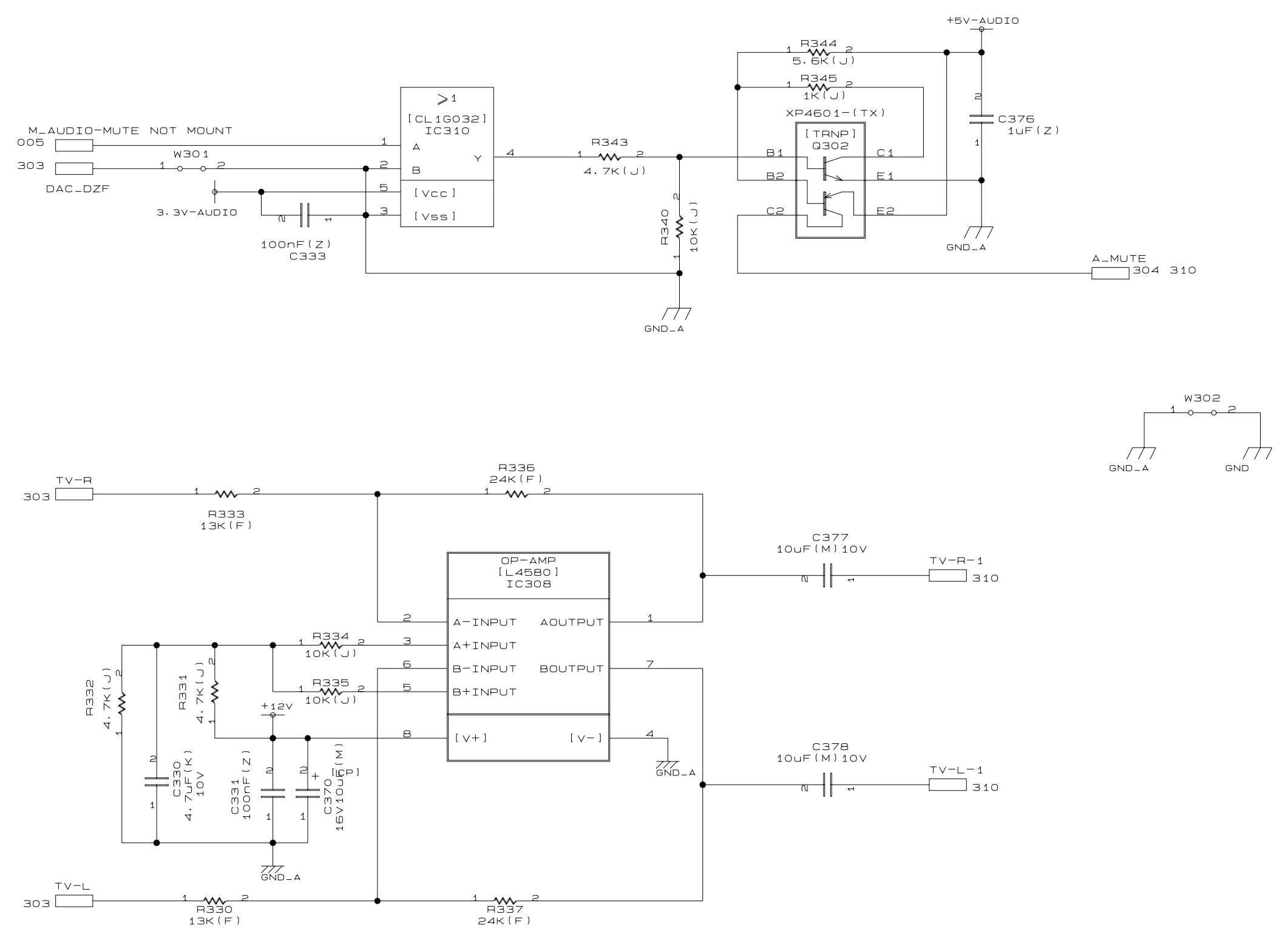
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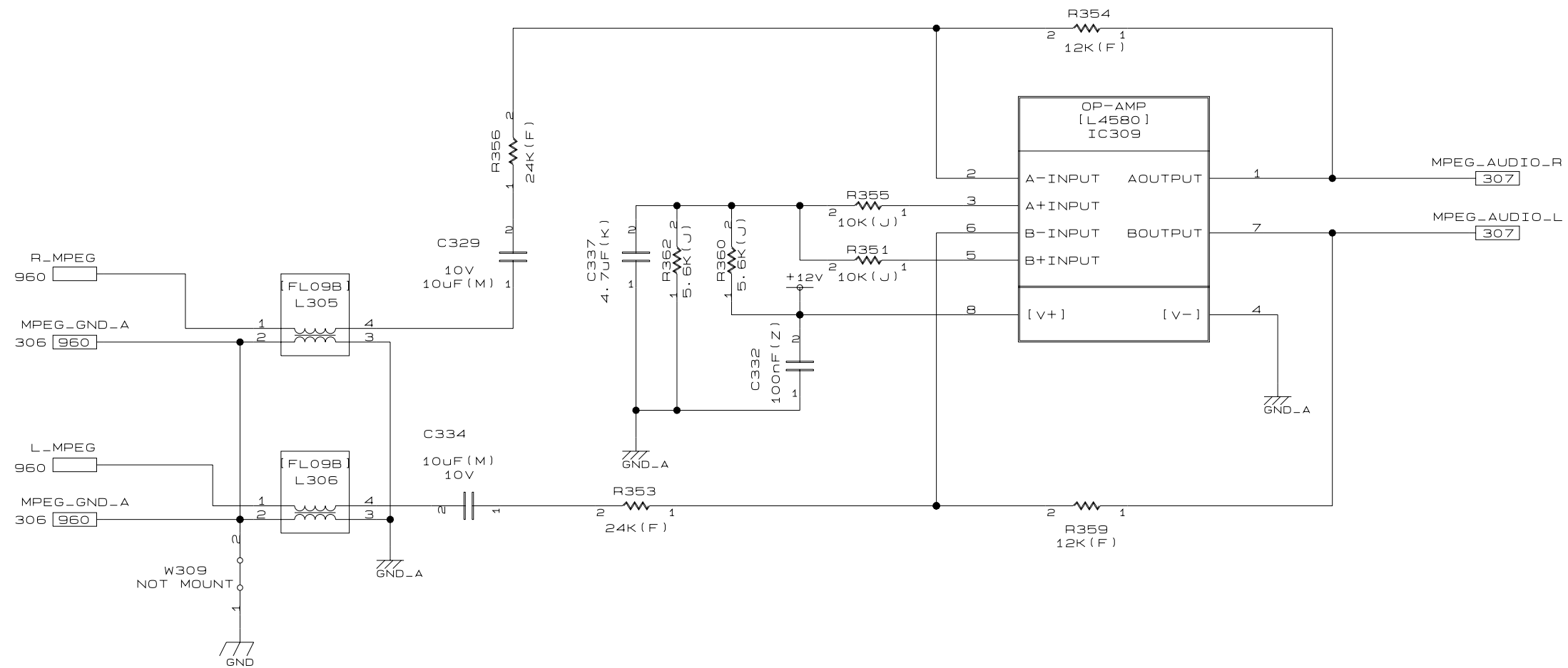
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32HLX95
SEINE FOR FPD
AUDIO SP OUT
SH. NO.
305



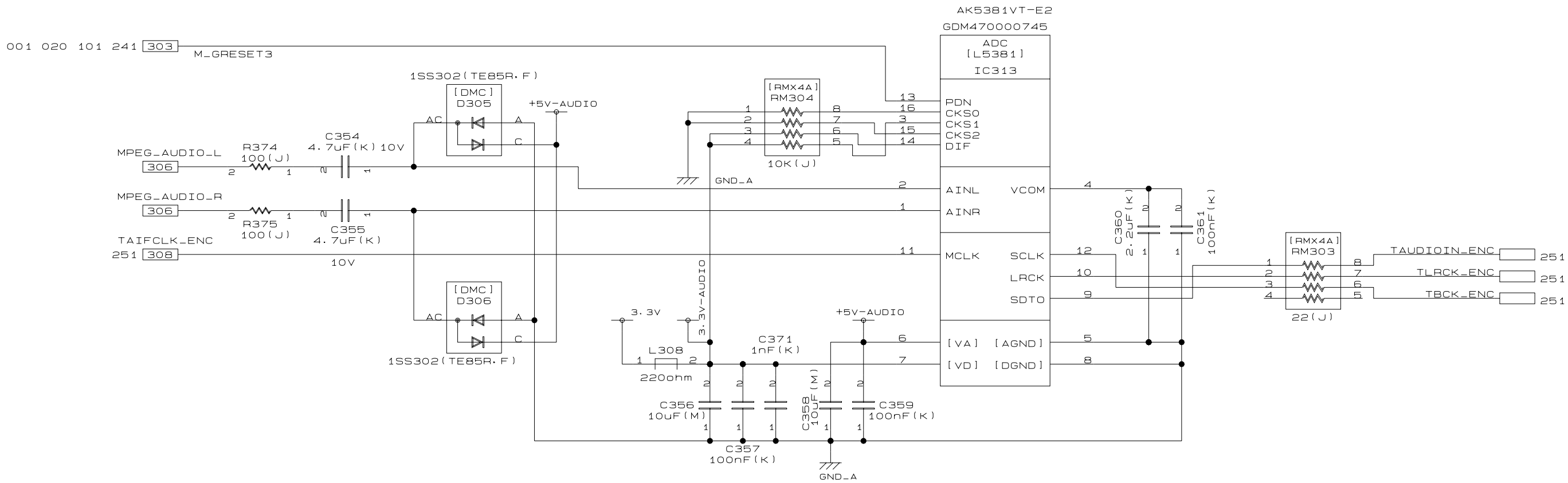
32HLX95
SEINE FOR FPD
MPEG2 AUDIO TV IN

SH. NO.
306

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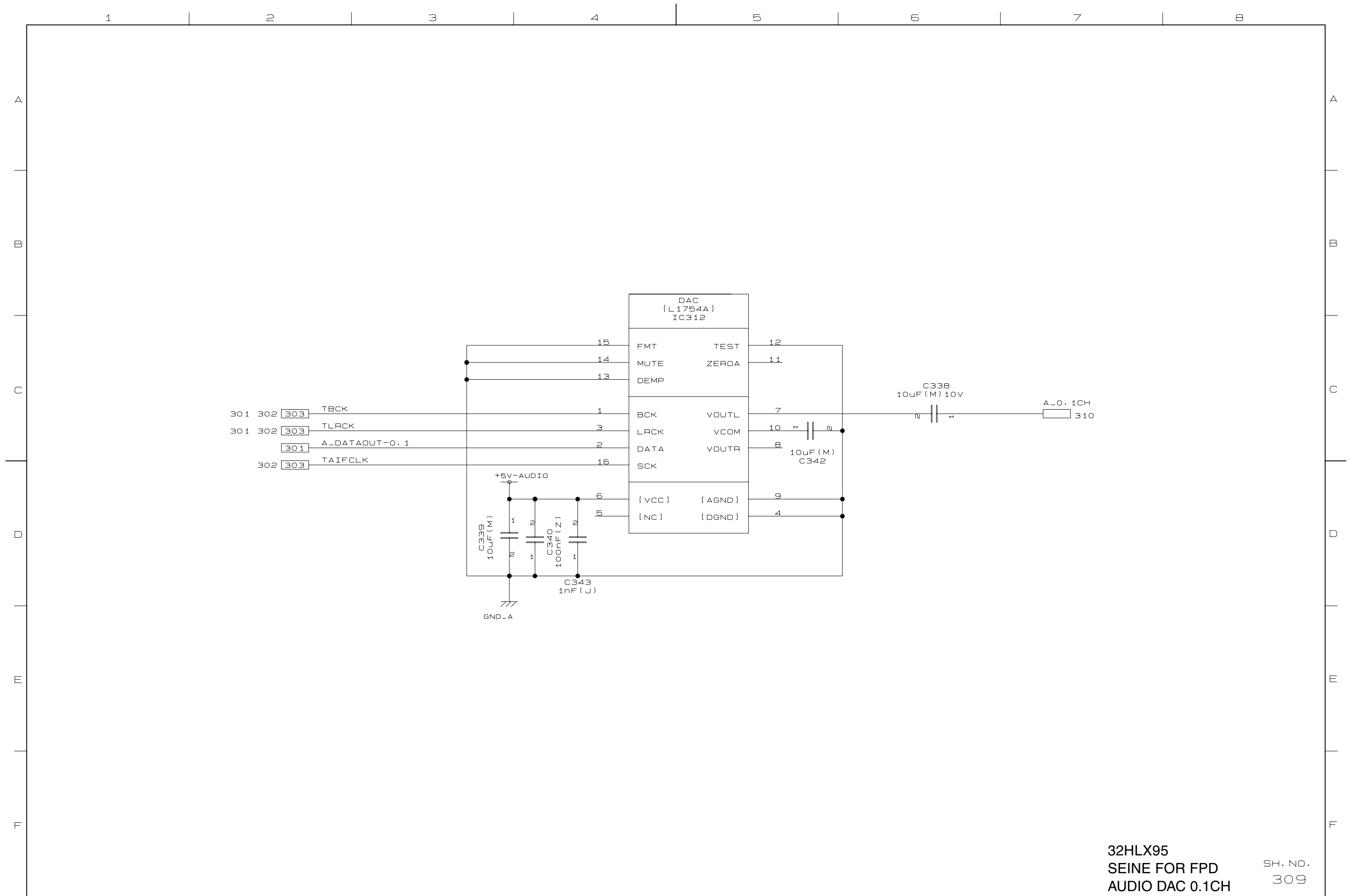
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32HLX95
SEINE FOR FPD
MPEG2 AUDIO ADC

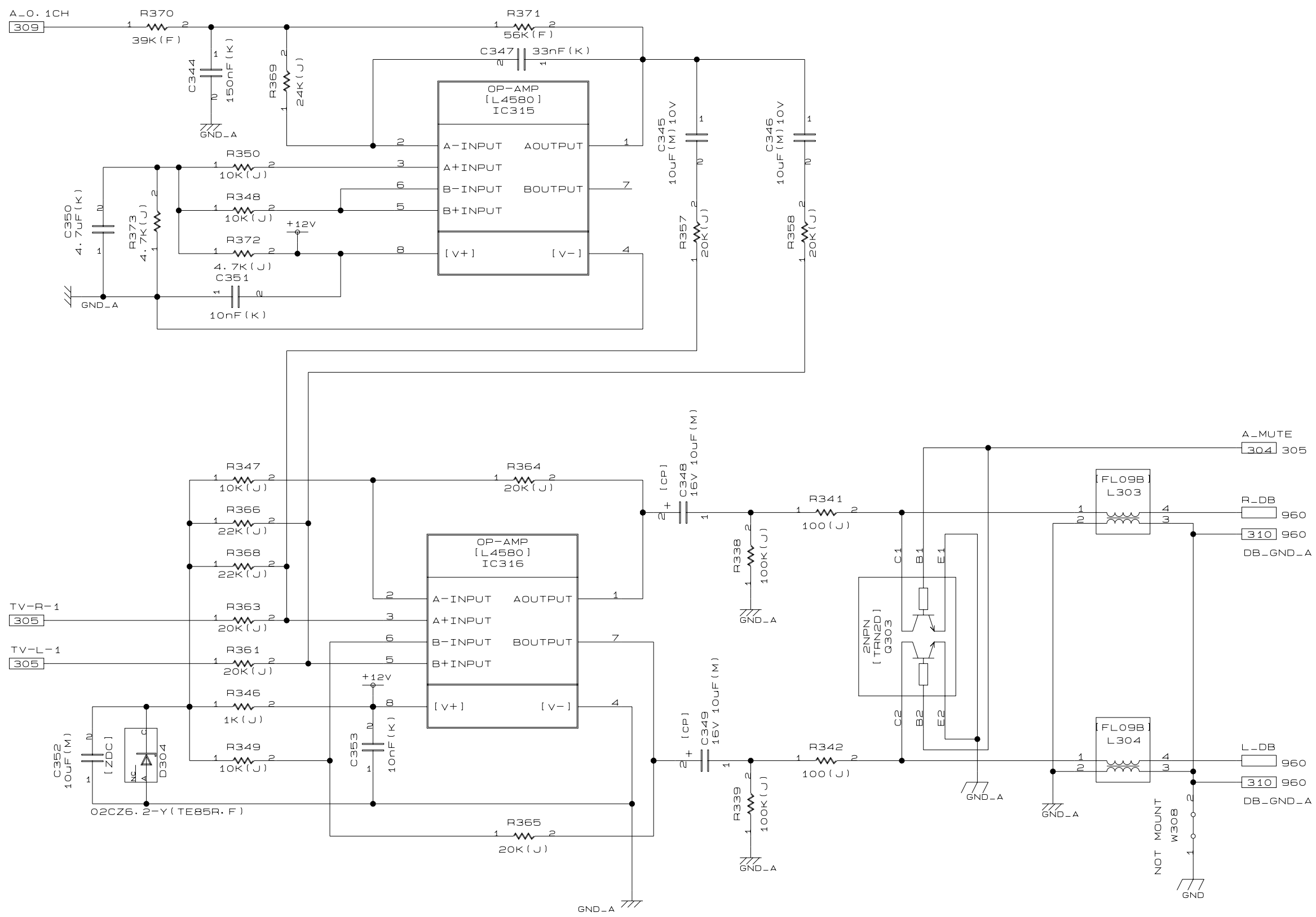
SH. NO.
307

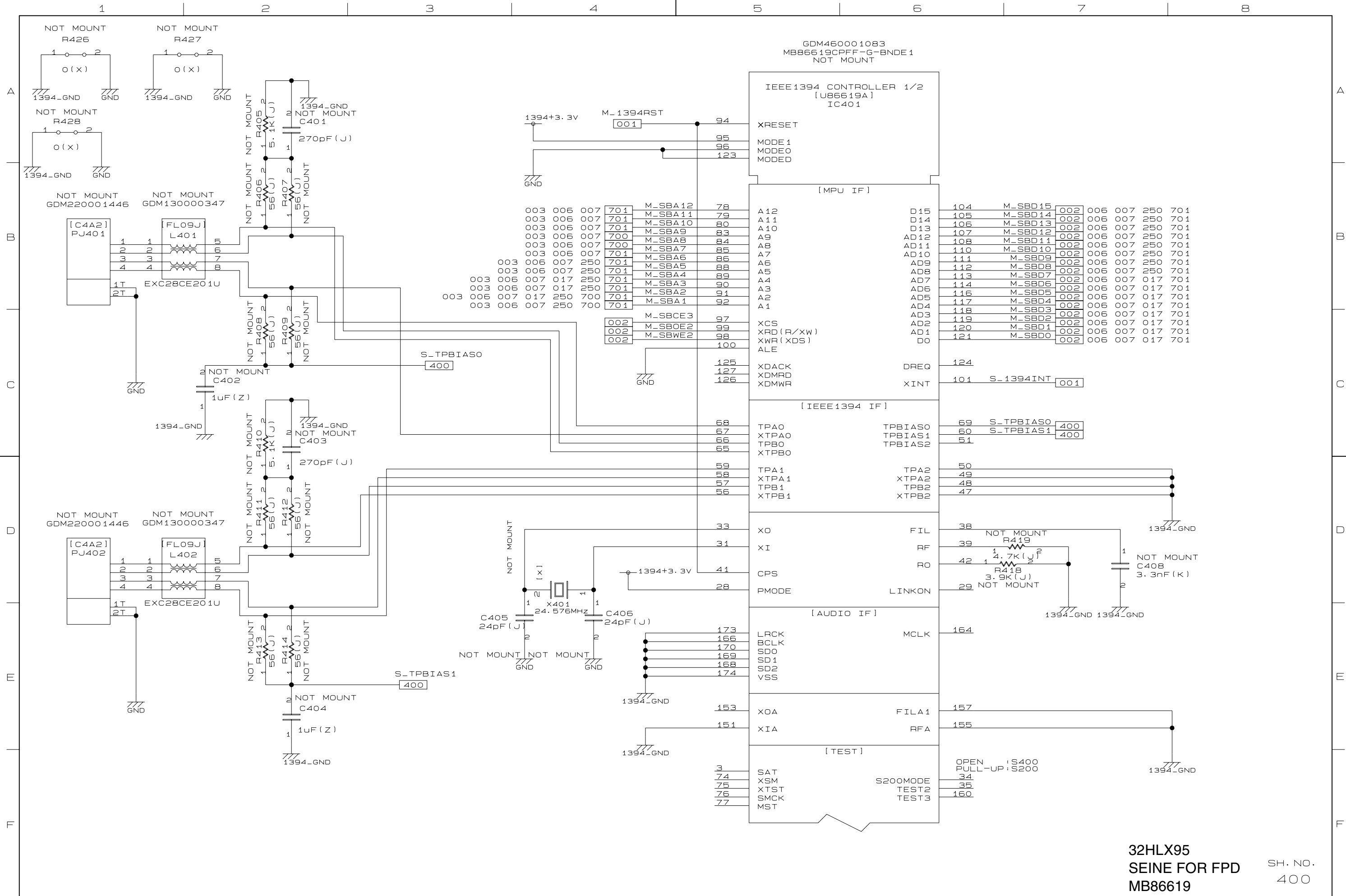


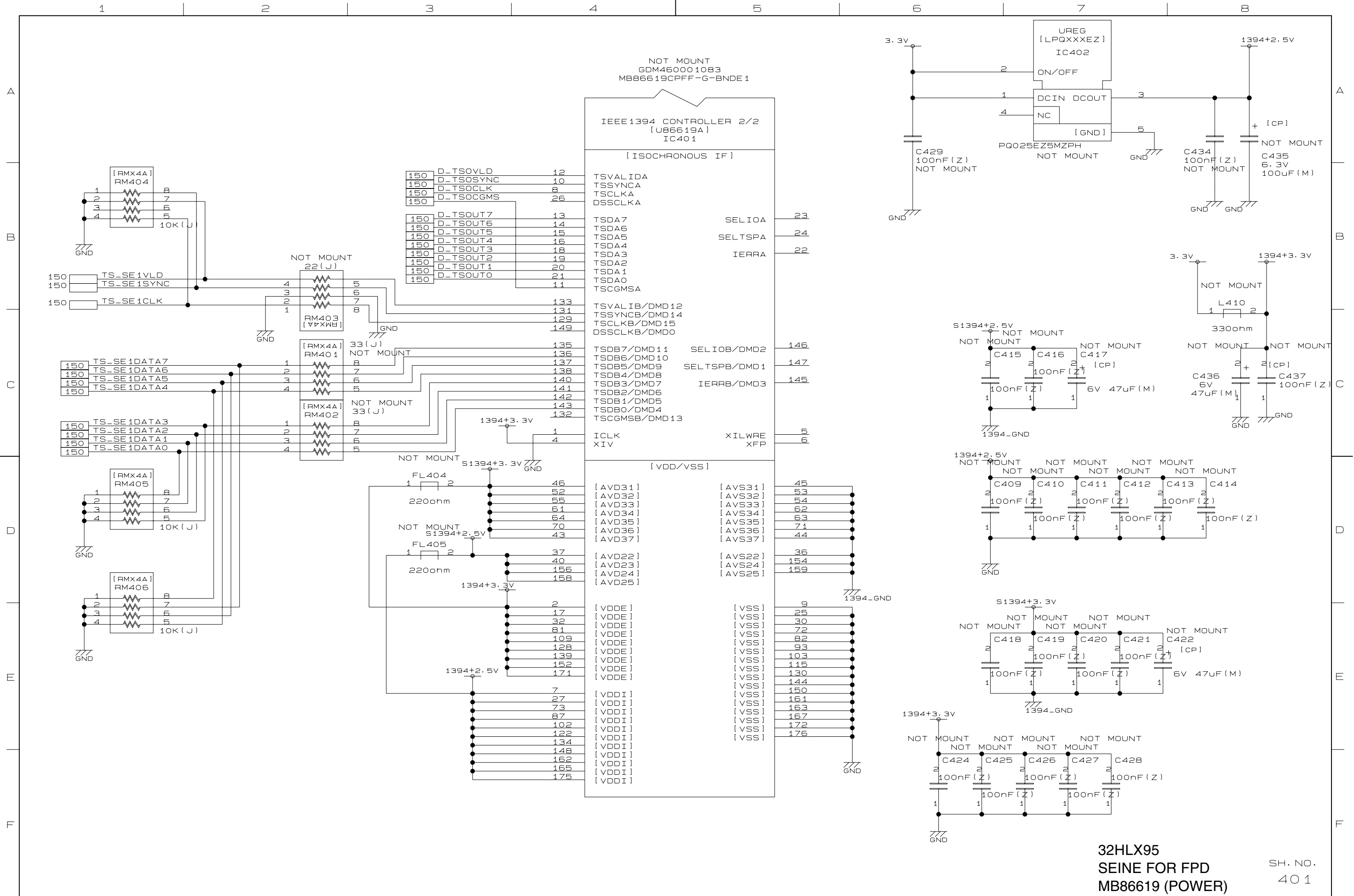
32HLX95
SEINE FOR FPD
AUDIO DAC 0.1CH

SH. NO.
309

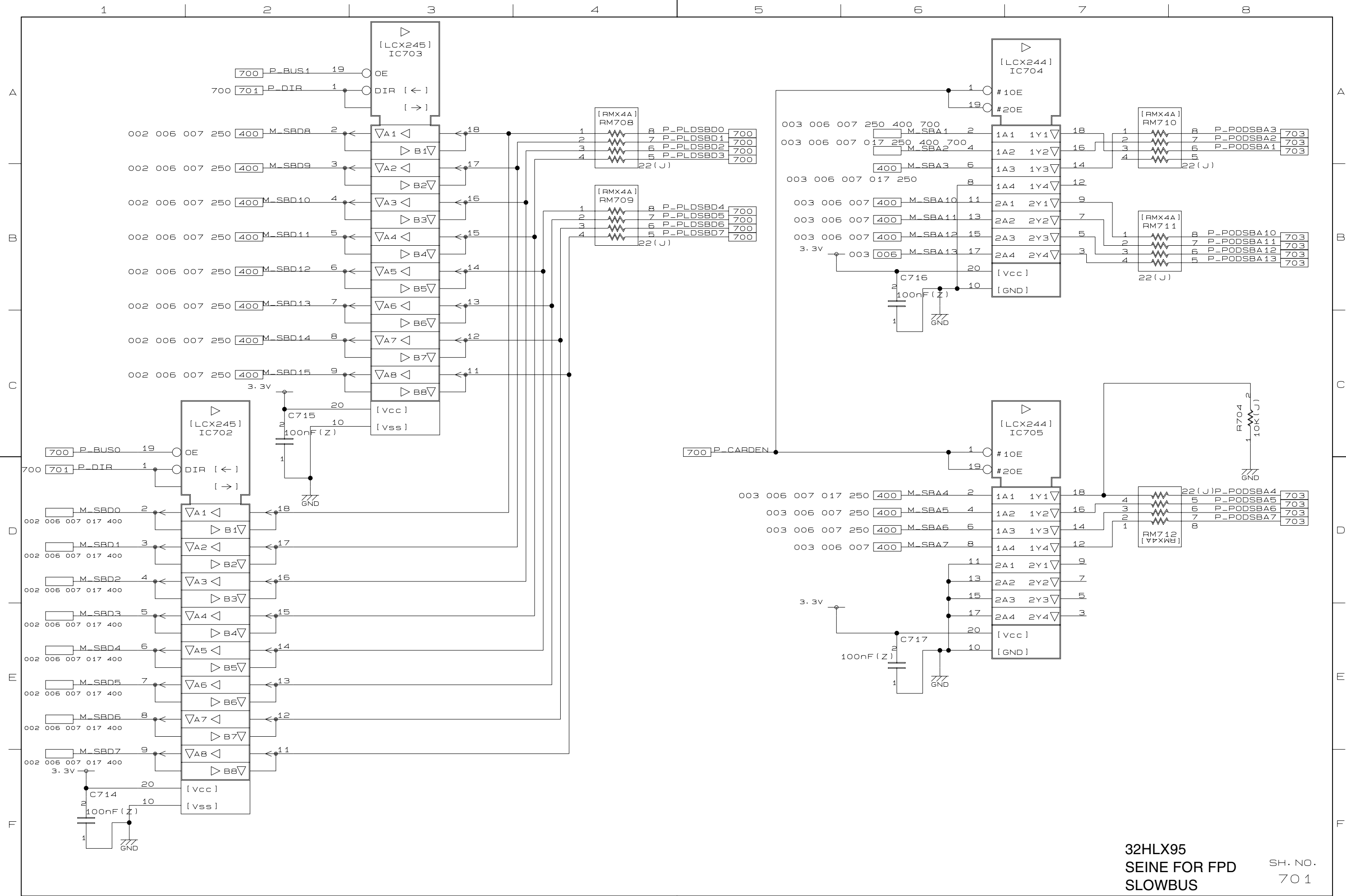
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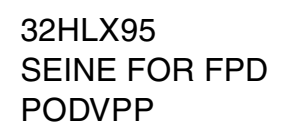




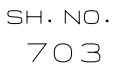


32HLX95
SEINE FOR FPD
MB86619 (POWER)
SH. NO.
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(117/134)



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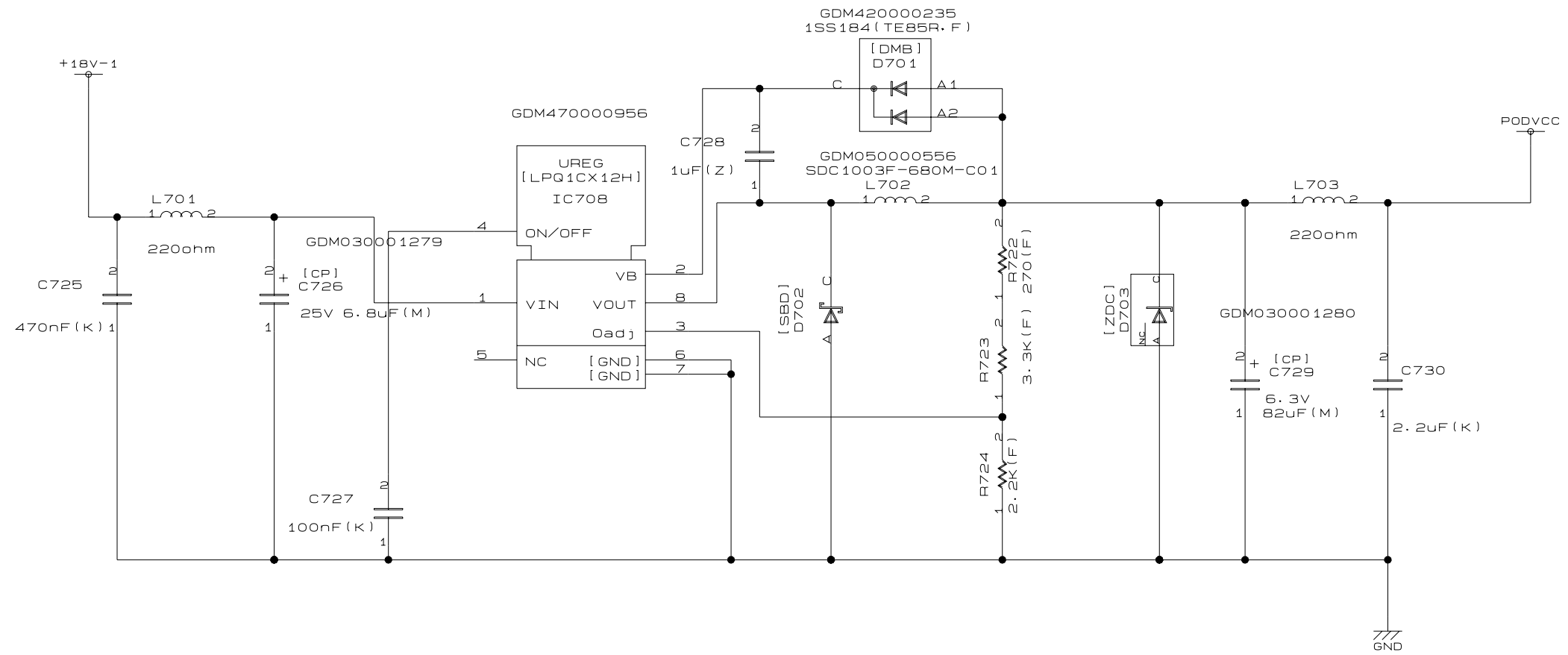
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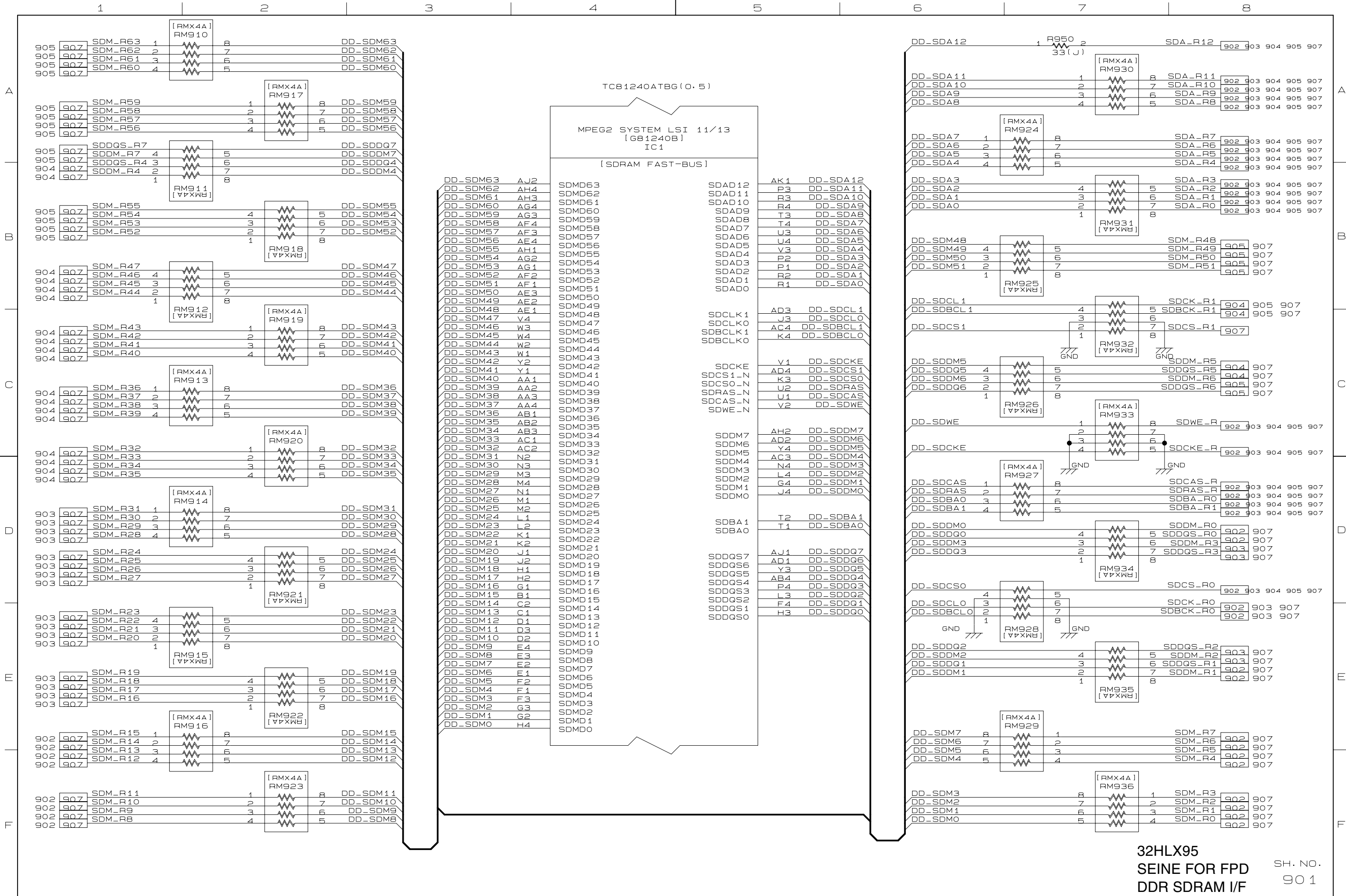
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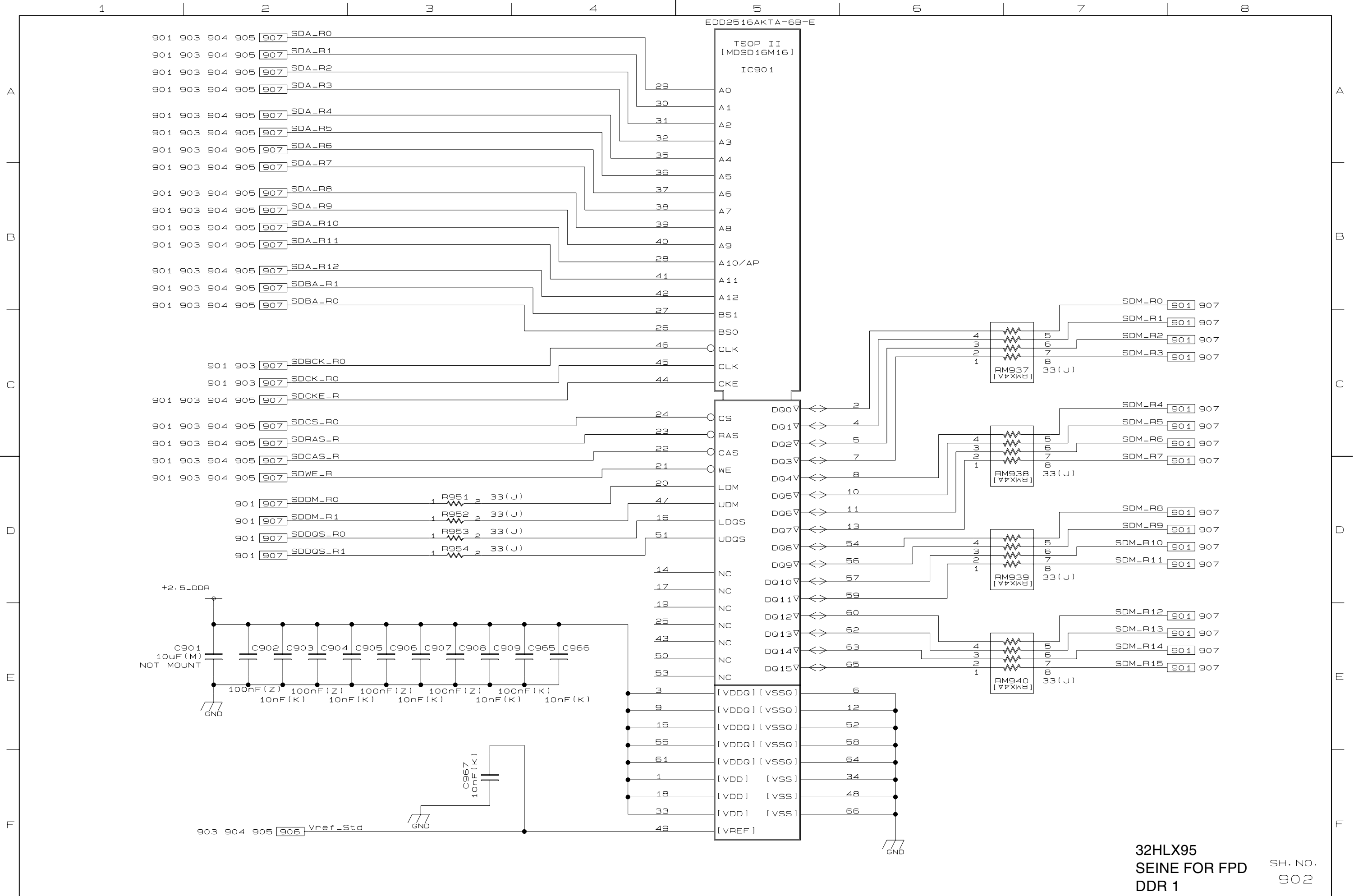
32HLX95
SEINE FOR FPD
PODVCC

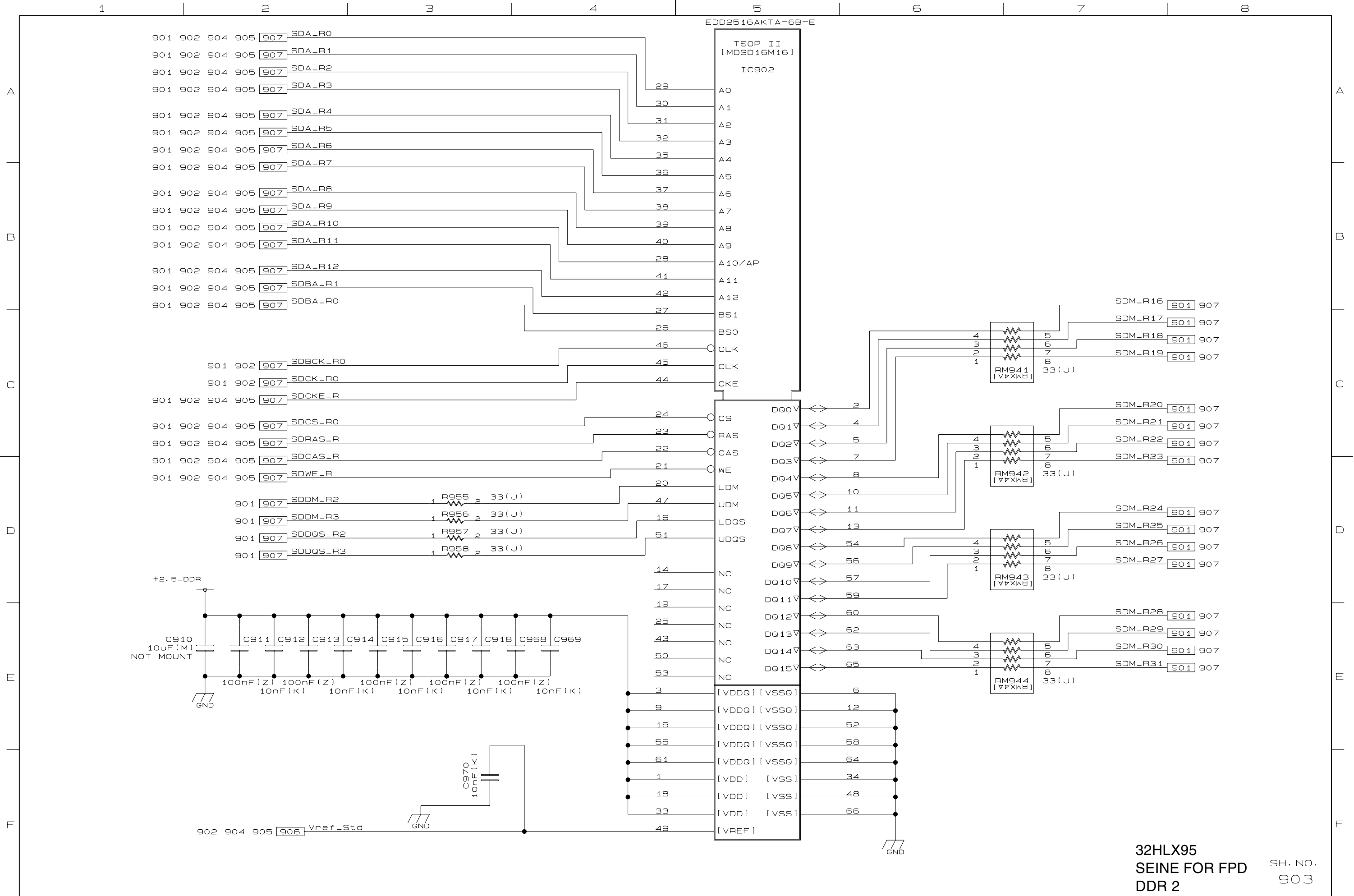
SH. NO.
704



32HLX95
SEINE FOR FPD
DDR SDRAM I/F

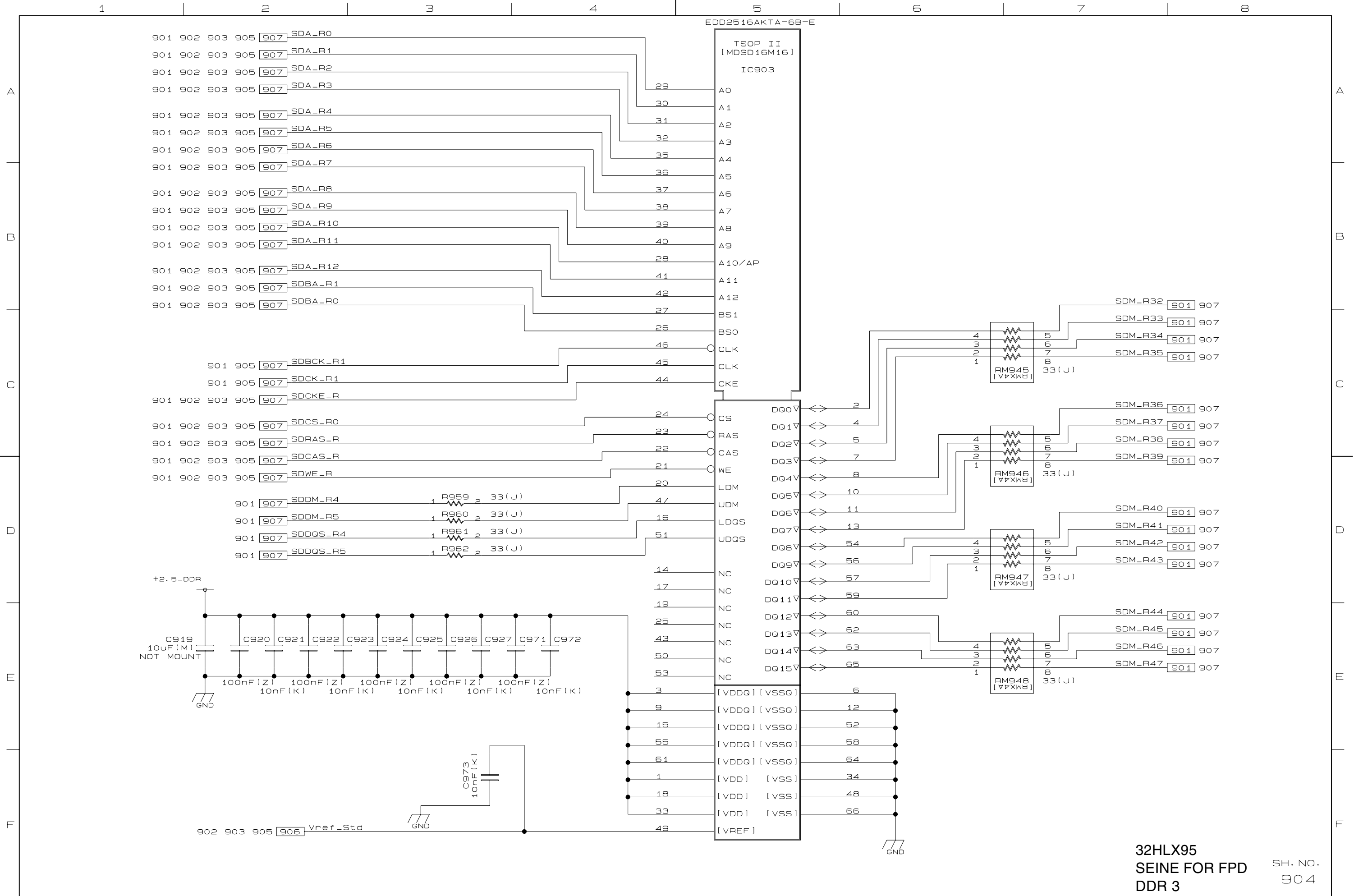
SH. NO.
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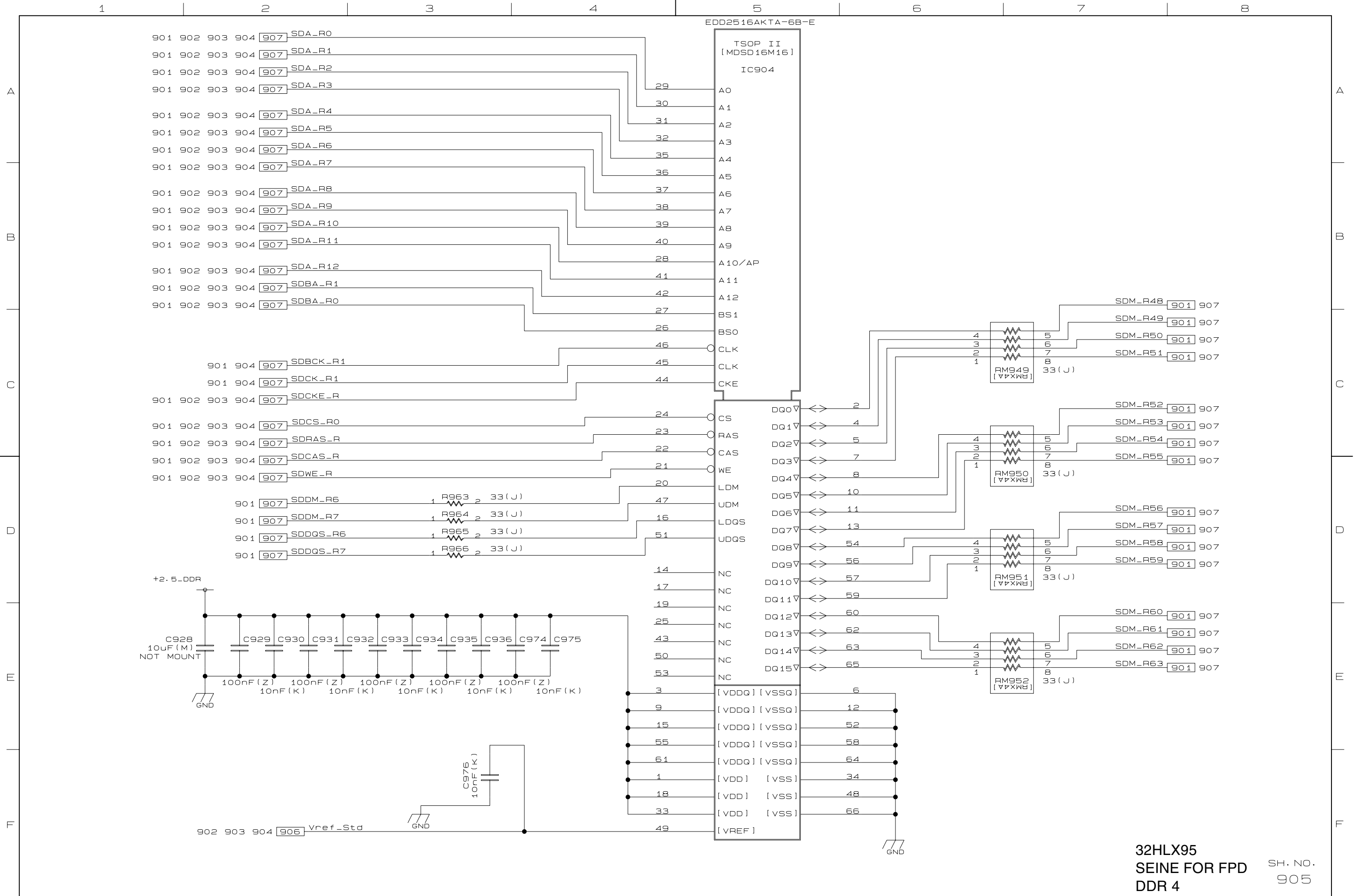


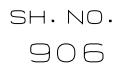


32HLX95
SEINE FOR FPD
DDR 2

SH. NO.
903



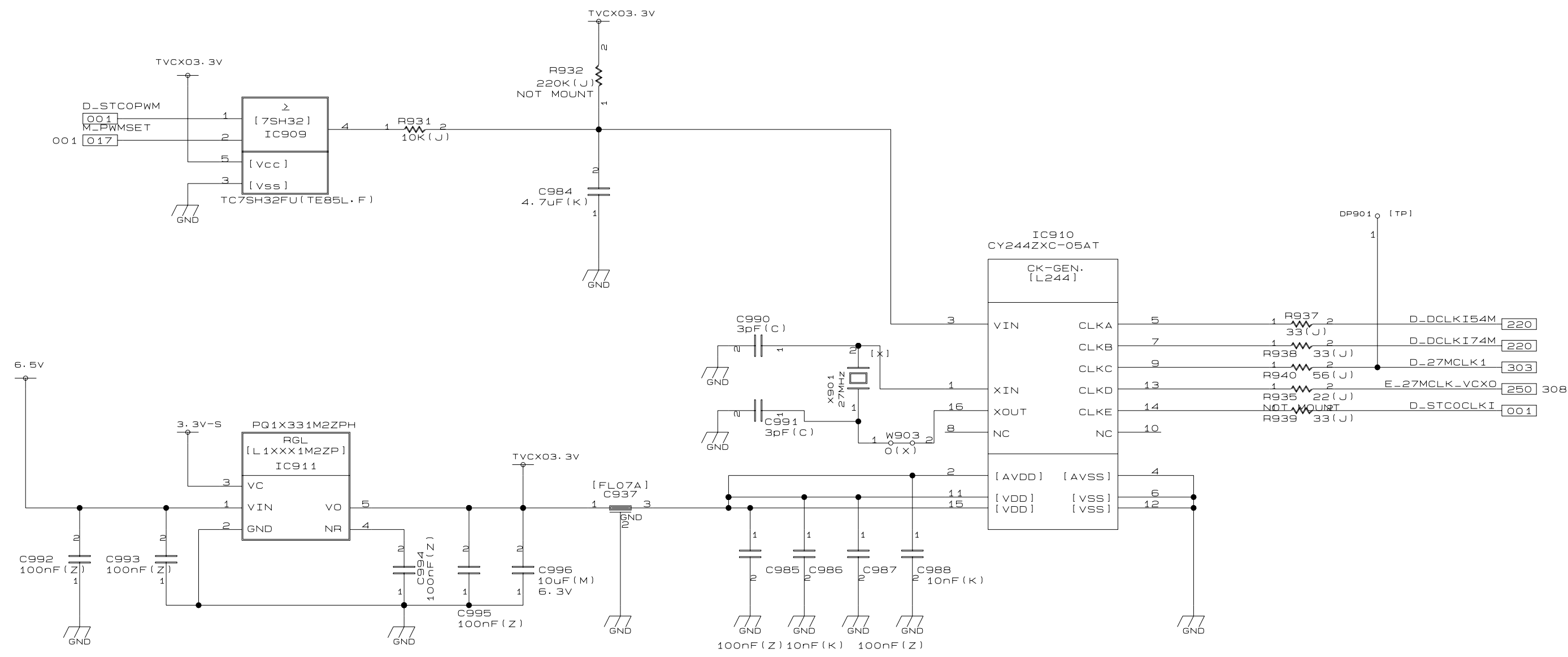


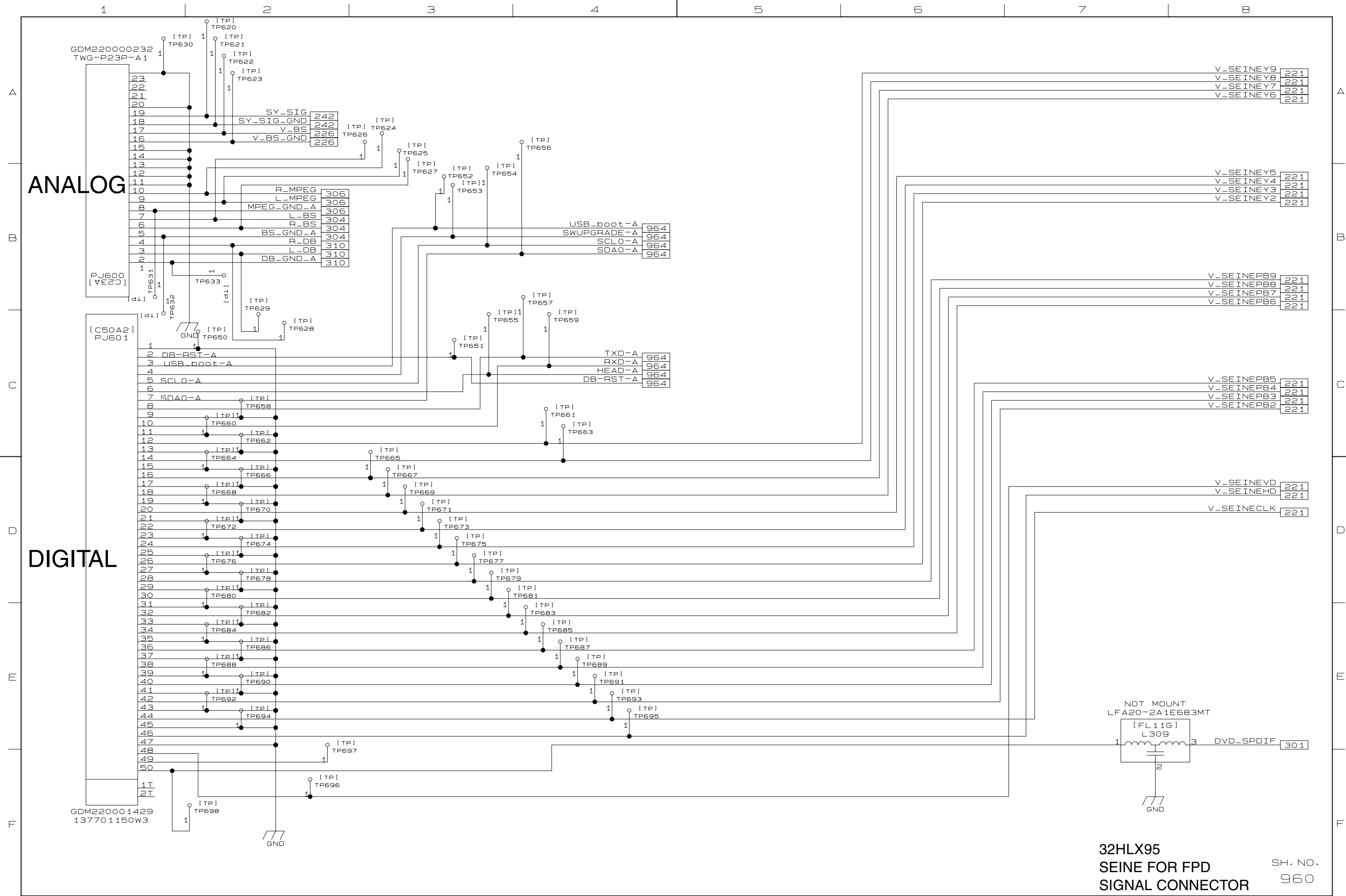


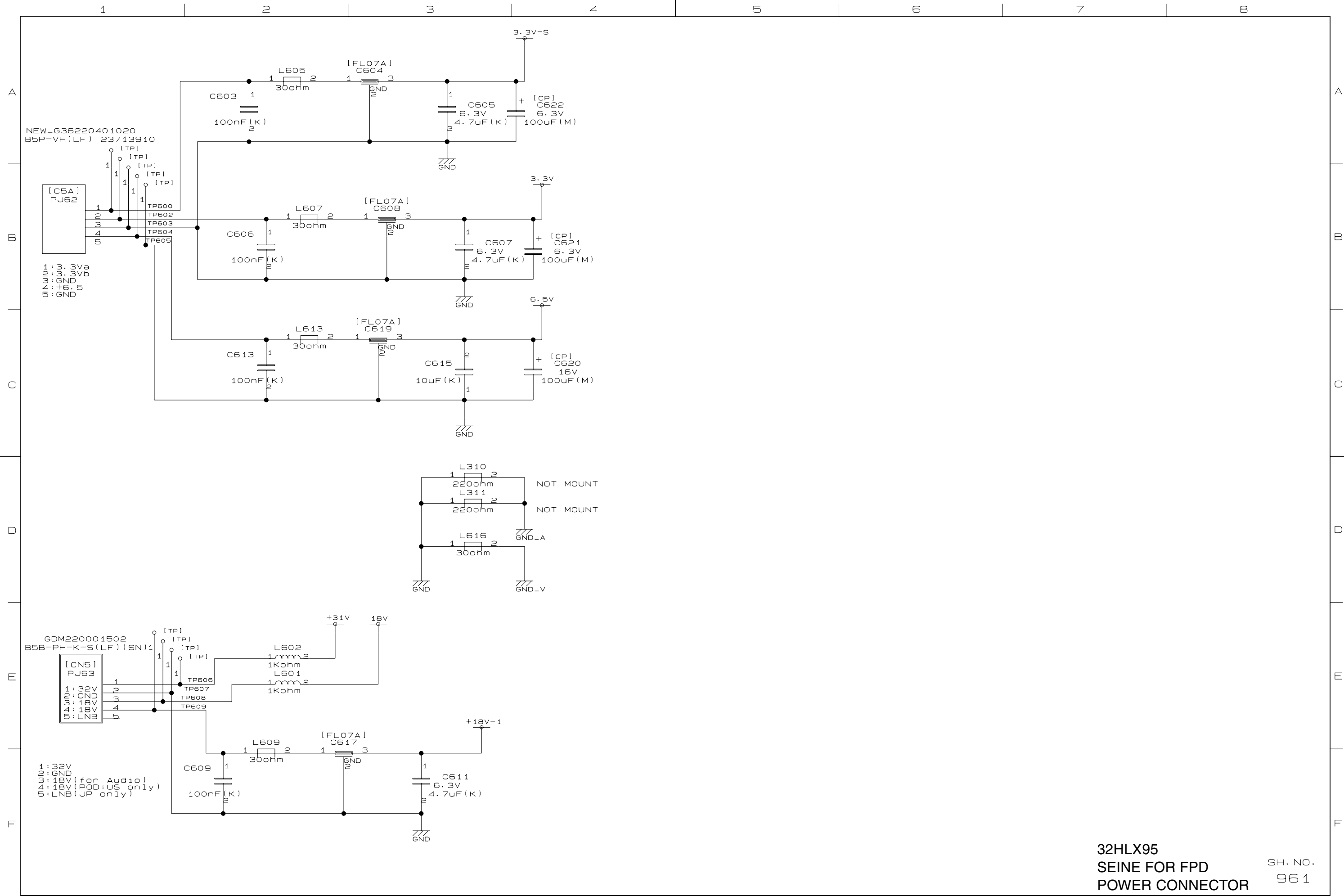


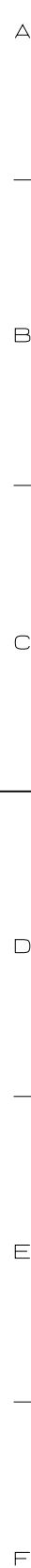
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SH. NO.
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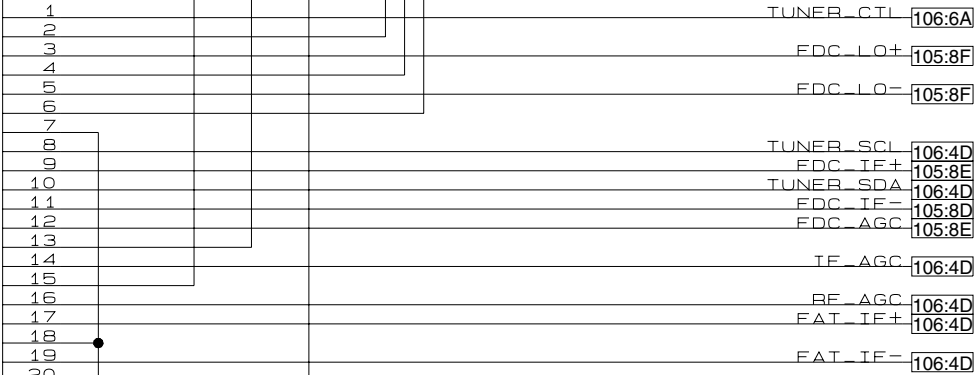
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To sht100
PJ800

GDM220001529
125622320K3

[C20A]
PJ860



FGND

C3001
10uF (M)

[HBGP1FM520TZ]
DS301

LED

VDD+6V

0.1uF (Z)
C861

FGND

GDM470000712

REG.
[LPQXXDZ]
IC864

ON/OFF

DCIN DCOUT

NC

[GND]

PQ05DZ5UJ00H

+5V_FDC1

+5V_FDC

+5V_FDC

L872

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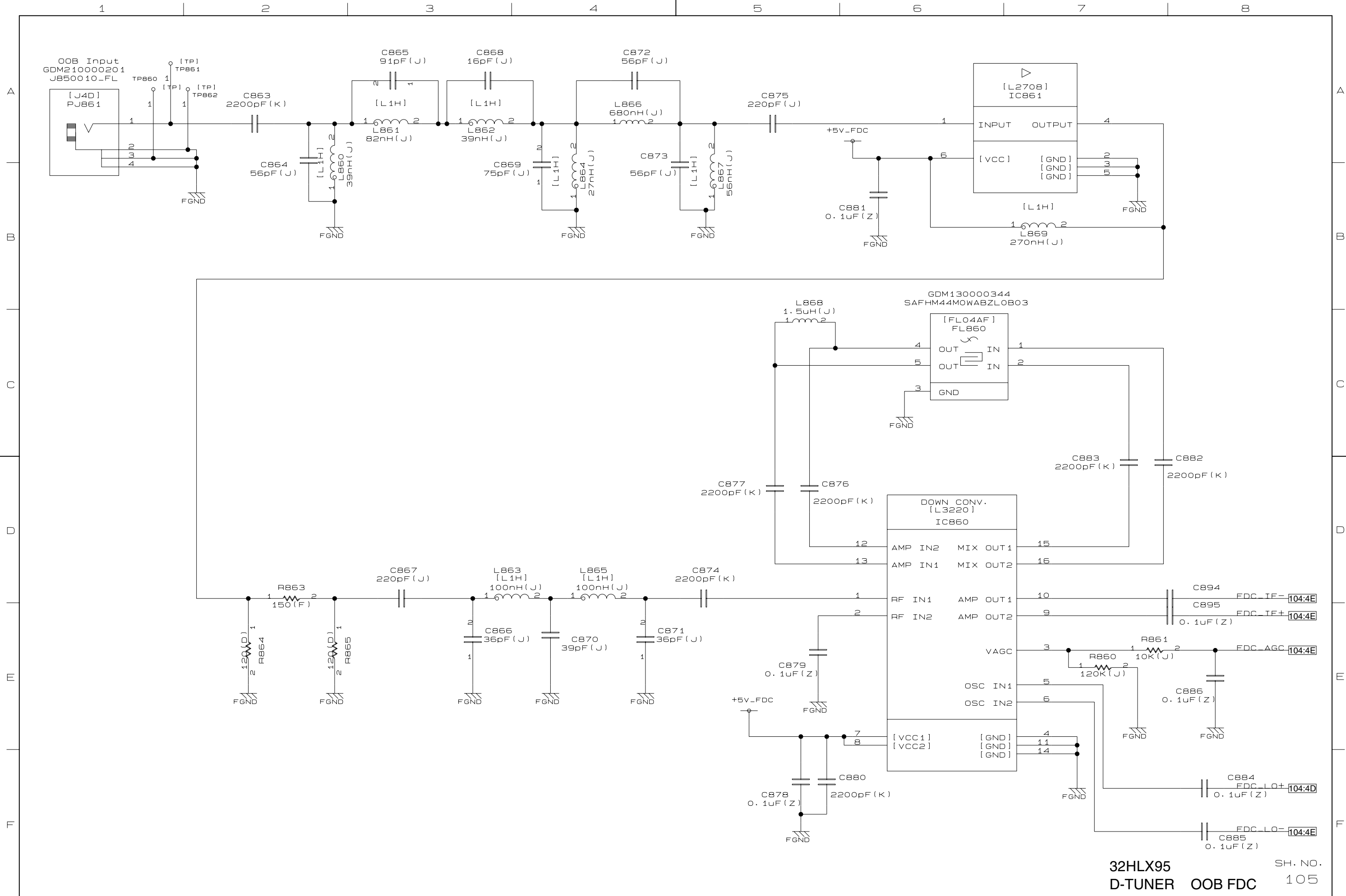
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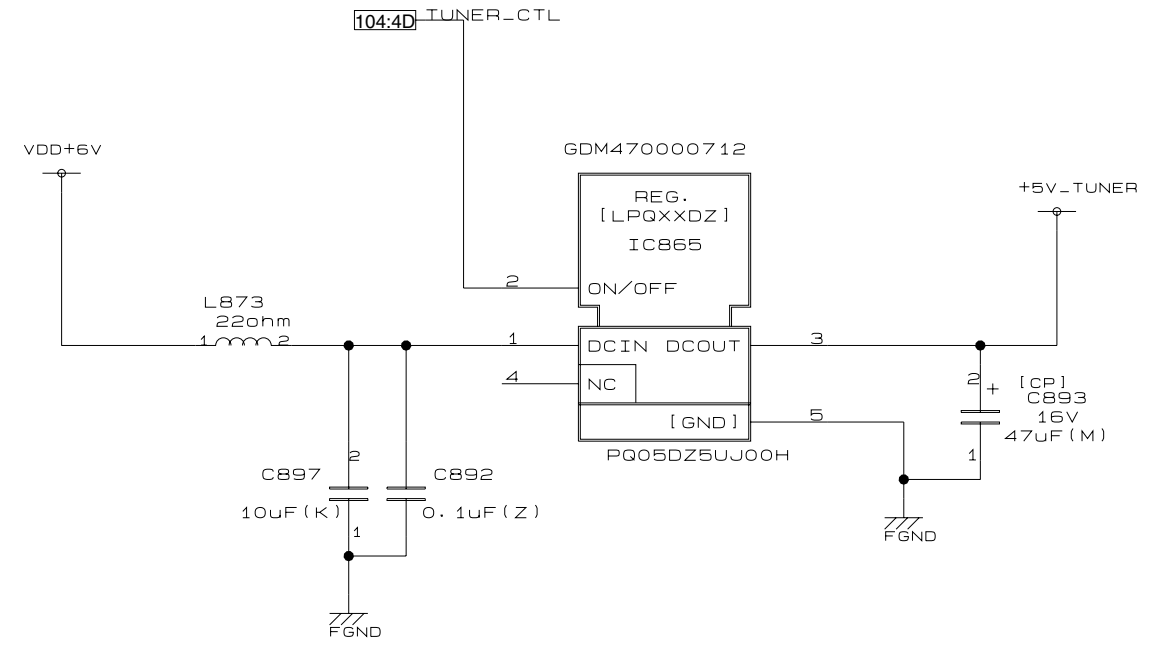
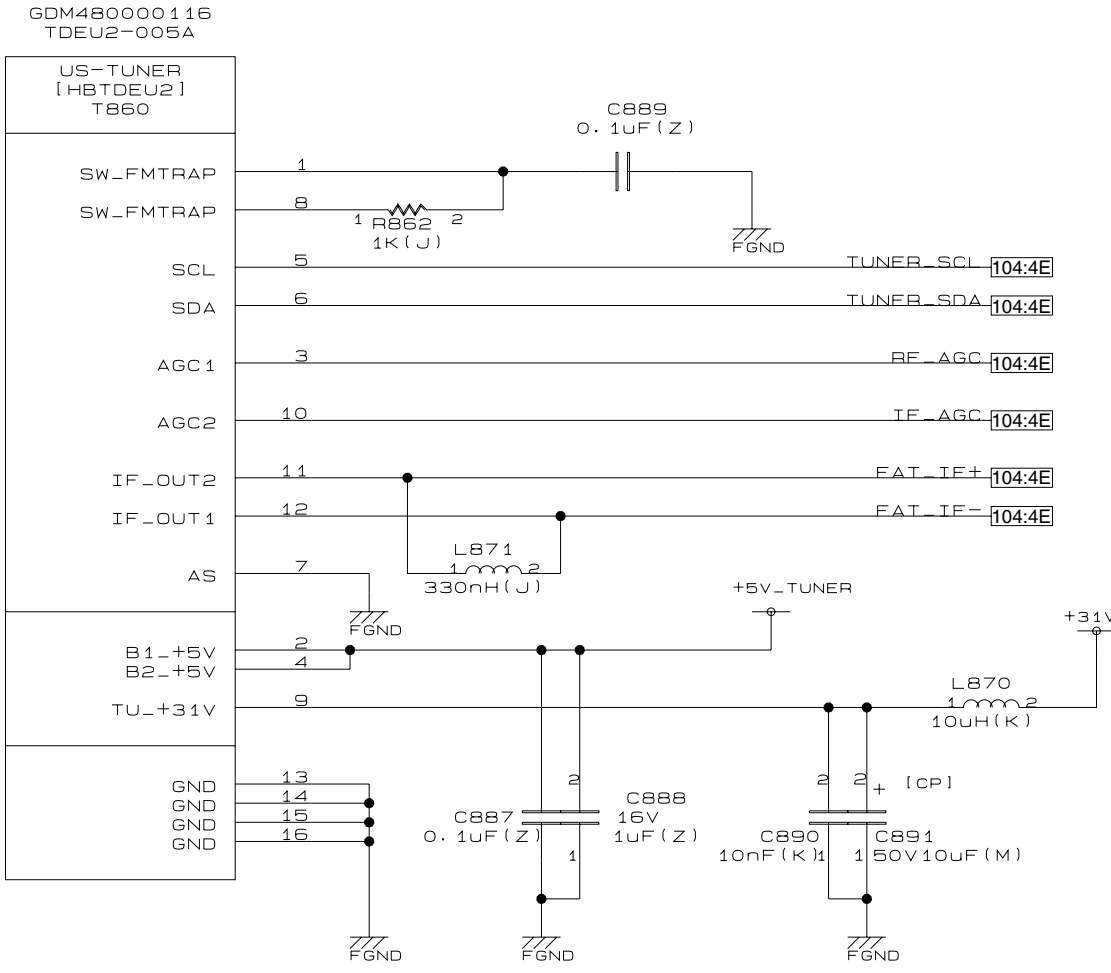
B

C

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E

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TOSHIBA CORPORATION
1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN